

THE AMERICAN JOURNAL OF PHARMACY

AUGUST, 1906.

LONDON BOTANIC GARDENS.

BY PIERRE ÉLIE FÉLIX PERRÉDÈS, B.Sc., F.I.S.,
Pharmaceutical Chemist.

A Contribution from the Wellcome Research Laboratories, London.

(Concluded from p. 325.)

THE CHELSEA PHYSIC GARDEN UNDER THE PRESENT ADMINISTRATION.

In 1893 the Apothecaries "applied to the Charity Commissioners for a Scheme which might provide for their relinquishment of the trust." On this occasion they were more successful than they had been in their previous negotiations with the Royal Society and the Royal College of Physicians, for, as a result of their application, a Treasury Committee, consisting of Sir Henry Longley, Sir W. T. Thiselton-Dyer, and Mr. Spring Rice, was appointed to inquire into the matter, "with reference to a suggestion that the garden should be supported by Imperial funds, with especial reference to its use by the students of the Royal College of Science at South Kensington." The principal reason advanced by the Society of Apothecaries for abandoning the garden was that the latter was no longer suitable for the purposes of a botanic garden, owing to the deleterious effects of London smoke and the impoverished condition of the soil. The above-mentioned Treasury Committee, however, "satisfied themselves that the garden was still well fitted for botanical purposes, and that its advantages were likely to be highly appreciated by the students of the Royal College of Science and of the various Polytechnics." In view of this favorable report the Charity Commissioners approached the Trustees of the London Parochial Charities to ascertain whether the latter would be willing to provide, or to assist in providing, funds for the maintenance of the garden. The

Trustees, in response to these advances, agreed to contribute £800 per annum towards the upkeep of the garden, while the Treasury expressed its willingness to provide a yearly sum of £150 for the same purpose. The Society of Apothecaries accordingly surrendered the garden on February 21, 1899, and the Charity Commissioners then established a Scheme by which "the Trustees of the London Parochial Charities were created the Trustees of the Garden," while its administration was entrusted to a committee of management constituted as follows:

Nine members appointed by the Trustees.

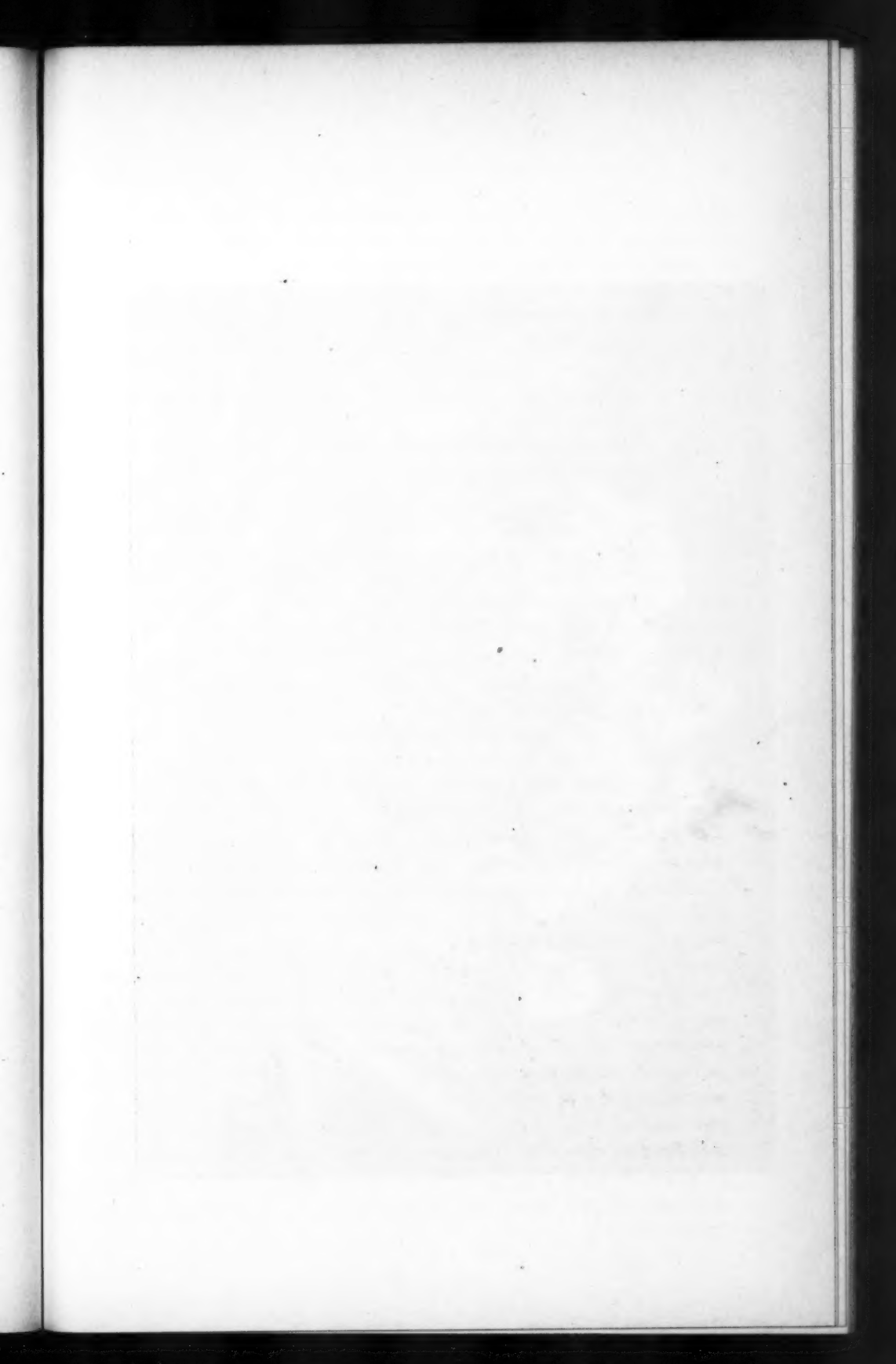
One member appointed by each of the following: The Treasury, the Lord President of the Council, the Technical Education Board of the London County Council, the Royal Society, the Pharmaceutical Society of Great Britain, and the Senate of the University of London.

One member appointed in turn by the Society of Apothecaries and the Royal College of Physicians.

These members were appointed for four or five years, and, with the exception of the last named, are eligible for reappointment at the expiration of their term of office.

To these sixteen members the representative of Sir Hans Sloane was added as *ex-officio* member of the committee.

In July, 1899, this committee appointed Mr. William Hales as Curator of the Garden, and, on the recommendation of Prof. J. Bretland Farmer, F.R.S., the Professor of Botany in the Royal College of Science, the Trustees were requested by the committee "to expend a sum of £4,230 in new buildings, and repairs and alterations to the existing buildings." The project was subsequently modified, owing to the fact that a sum of £2,000 was realized by the sale "of a strip of frontage to Royal Hospital Road (then known as Queen's Road) to the vestry of Chelsea." This necessitated the pulling down of the Curator's house and other buildings, so that, on the application of the Trustees, an expenditure of £6,000 was ultimately authorized by the Charity Commissioners. The balance (£4,000), was advanced by the Trustees, "to be repaid in thirty years out of the income of the garden," which "consists of the £800 paid by the Trustees, the £150 paid through the Board of Education, and an annual sum of £10 paid by the University of London in consideration of the many and exceptional specimens supplied for examinations."





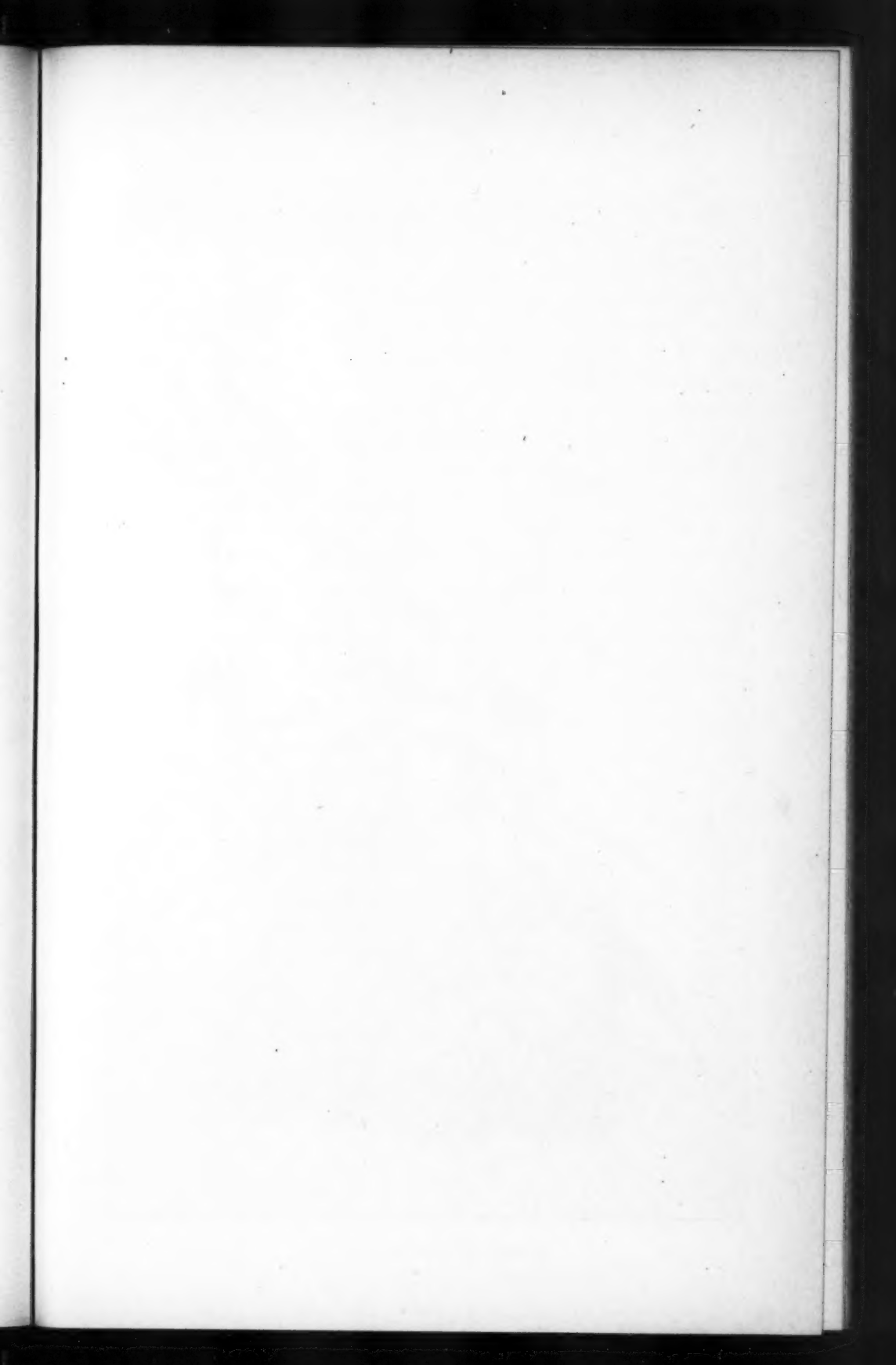
IRIS FLORENTINA, L.
Growing in the Chelsea Physic Garden.

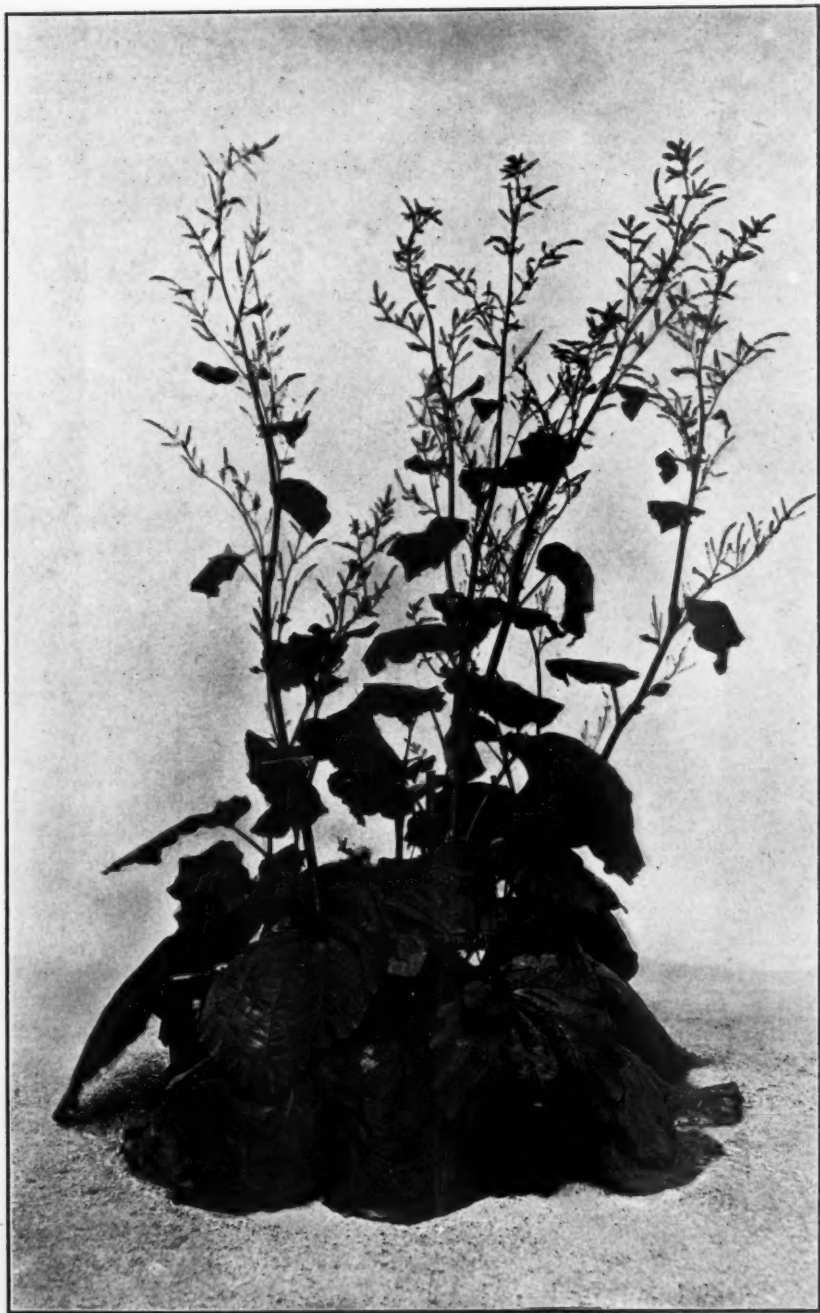
The buildings were completed in 1902, and on July 25th of that year the garden was formally reopened by the Earl of Cadogan, who is "the *ex officio* member of the committee, and a lineal descendant of Sir Hans Sloane."

With this brief account of the reorganization of the garden we will proceed at once to the description of the garden under the present administration. We shall consider, first of all, the collections growing out of doors, then the plant houses and other buildings, and, finally, the work that is being done in the garden.

The Collections growing out of doors.—When the garden was taken over by the present Trustees it was found to be in a very dilapidated condition, but under the energetic curatorship of Mr. William Hales it has been transformed into the most efficient educational botanic garden in the metropolis. During the years 1900, 1901, and 1902 a liberal supply of turf, loam, manure and gravel was utilized in renovating the garden, and "instruments, tools, pots, mowing-machines, watering-hose, and the many other necessary articles essential to a well-equipped garden" were adequately provided. The stocking of the beds was then proceeded with, the arrangement adopted being shown on Plate XXVI. Plants and seeds were obtained from the various British botanic gardens, and the old plants were correctly renamed so far as possible. Special pains have been taken in labeling the specimens, and old mistakes are nearly all rectified. In rearranging the beds, the special collections of medicinal plants were suppressed and the various patterns of beds which had been in use were reduced to a common type of narrow parallel ones (see Plate XXX), the plants being thereby rendered more accessible. The main portion of the herbaceous collections is located in the southern half of the garden (see Plate XXVI), where the plants are arranged in regular sequence of natural orders according to Bentham and Hooker's *Genera Plantarum*. Over one hundred natural orders are represented, in many cases by medicinal plants. The plants in the "mixed beds" consist mainly of such duplicates as are most frequently needed for teaching purposes. The trees and shrubs are not numerous, but, in addition to those indicated on Plate XXVI, there are a few groups and isolated specimens scattered about the garden (see Plates XXIV and XXX). The following list includes most of the plants of interest in pharmacy that were grown out of doors in the Chelsea Garden in 1905:—

Achillea Millefolium, L.; *Aconitum ferox*, Wall., *A. Fischeri*, Reichb., and *A. Napellus*, L.; *Æthusa Cynapium*, L., fool's parsley; *Agrimonia Eupatoria*, L., the "*Aigremoine*" of the French Codex; *Althæa officinalis*, L.; *Anacyclus Pyrethrum*, L.; *Anthemis Cotula*, L., and *A. nobilis*, L.; *Apocynum cannabinum*, L., Canadian hemp, the root of which is the "*Apocynum*" of the U.S.P.; *Archangelica officinalis*, L.; *Arctium Lappa*, L., burdock, whose root is official in the U.S.P., under the name of "*Lappa*"; *Arctostaphylos Uva-ursi*, Spreng.; *Arnica montana*, L.; *Artemisia Absinthium*, L.; *Arum maculatum*, L., the "*Arum*," "*Gouet*," or "*Pied-de-veau*" of the Codex, with a starchy rhizome from which "*Portland Arrowroot*" was formerly obtained; *Asarum Canadense*, L., wild ginger or Canadian snakeroot, the rhizome of which contains an aromatic essential oil; *Asparagus officinalis*, L., now little used in medicine, though still represented in the Codex by the rhizome and roots, and by the young shoots (*Turions d'Asperge*); *Atropa Belladonna*, L.; *Avena sativa*, L., whose fruits, freed from their glumes, constitute the "*Gruau d'Avoine*" of the Codex; *Borago officinalis*, L., represented in the Codex by the leaves, from which a *succus* and an extract are prepared, and by the flowers, of which an infusion is made; *Brassica alba*, Hook. f., white mustard, *B. Napus*, L., which yields rapeseed oil, and *B. nigra*, Koch, black mustard; *Bryonia dioica*, Jacq., one of the two species of *Bryonia* from which the Bryony Root of the homœopaths is obtained; *Calamintha officinalis*, Moench, the "*Calament*" of the Codex; *Calendula officinalis*, L.; *Cannabis sativa*, L., the Indian variety of which yields the "*Cannabis Indica*" of the pharmacopœias; *Carum Carvi*, L., and *C. Petroselinum*, Benth et Hook. f.; *Centaurea Cyanus*, L., whose flower-heads constitute the "*Bluet*" of the Codex; *Chelidonium majus*, L.; *Chenopodium anthelminticum*, L., the "*Anserine vermifuge*" of the Codex, which yields a volatile oil official in the U.S.P.; *Chrysanthemum Parthenium*, Bernh., and *C. roseum*, Weber, the latter of which yields Persian insect flowers; *Cichorium Intybus*, L.; *Cimicifuga racemosa*, L.; *Cnicus benedictus*, L.; *Cochlearia Armoracia*, L., the horseradish, and *C. officinalis*, L., or common scurvy grass, which, as its name indicates, was formerly much used as a remedy for scurvy, and is still official in the Codex, entering into the preparation of a compound spirit of horseradish and of a confection; *Colutea arborescens*, L., bladder senna, the leaflets of which were stated by Pereira to have been used on the Continent for the purpose of adulterating senna; *Conium maculatum*, L.; *Coriandrum sativum*, L.; *Cucurbita Pepo*, L., which yields pumpkin seed, used as a tænistuge; *Cynoglossum officinale*, L., whose root appears to have been expressly introduced into the Codex to mask the name of a compound opium pill, known as "*Pilule de Cynoglosse*" (cf. the Compound Pill of Soap of the British Pharmacopœia); *Cytisus scoparius*, L.; *Daphne Mezereum*, L.; *Datura Stramonium*, L., and the closely related *D. Tatula*, L.; *Daucus Carota*, L., *Dictamnus albus*, L., the "*Fraxinelle*" or "*Dictame blanc*" of the Codex; *Digitalis purpurea*, L.; *Ecballium Elaterium*, A. Rich.; *Echium vulgare*, L., the flowers of which are generally known in French commerce as "*Fleurs de Buglosse*," although *Anchusa officinalis*, L., is the "*Buglosse*" of the Codex; *Eryngium campestre*, L., the "*Chardon Roland*" or "*Panicaut*" of the Codex; *Fragaria vesca*, the strawberry, whose rhizome and fruit are both official in the Codex; *Fraxinus Ornus*, L.; *Galium Mollugo*, L., the "*Caille-*





RHEUM OFFICINALE, BAILL. [?],
Growing in the Chelsea Physic Garden.



RHEUM PALMATUM, L.,
Growing in the Chelsea Physic Garden.

lait blanc" of the Codex; *Geranium maculatum*, L., the rhizome of which constitutes the "*Geranium*" of the U.S.P.; *Geum urbanum*, L., whose astringent roots form the "*Souches de Benoite*" of the Codex; *Glycyrrhiza glabra*, L.; *Gratiola officinalis*, L., the "*Gratiola*" of the Codex; *Hordeum vulgare*, L., whose fruits are used in the preparation of malt extract and for making barley water; *Humulus Lupulus*, L.; *Hyoscyamus niger*, L.; *Hypericum perforatum*, L., whose flowering tops are still retained in the Codex; *Hyssopus officinalis*, L., the "*Hysope*" of the Codex; *Inula Helenium*, L.; *Iris Florentina*, L.; *Isatis tinctoria*, L., the woad, which yields a blue dye that was extensively used before the introduction of indigo; *Laurus nobilis*, L., *Lavandula vera*, D.C.; *Levisticum officinale*, Koch; *Linum usitatissimum*, L.; *Malva sylvestris*, L., the leaves and flowers of which are official in the Codex; *Marrubium vulgare*, L., the "*Marrube blanc*" of the Codex, also official in the U.S.P.; *Me'ilotus officinalis*, Lam.; *Melissa officinalis*, L.; *Mentha Piperita*, L.; *Morus nigra*, L., the mulberry tree, whose fruits enter into the preparation of a syrup in the Codex; *Nicotiana Tabacum*, L.; *Nigella Damascena*, L., *Cenanthe crocata*, L., a rank poison which has been mistaken for celery and other *Umbelliferae*; *Ononis spinosa*, L., which yields the "*Hauhechelwurzel*" of the German *Arzneibuch*; *Opoponax Chironium*, Koch; *Origanum vulgare*, L., the "*Origan vulgaire*" of the Codex, and *O. Majorana*, L., the "*Marjolaine*" of the same work; *Papaver Rhæas*, L., and *P. somniferum*, L.; *Peucedanum Ostruthium*, Koch; *Phytolacca decandra*, L.; *Pimpinella magna*, L., the root of which is official in the *Arzneibuch* under the name of "*Radix Pimpinellæ*" or "*Bibernellwurzel*"; *Plantago major*, L., *P. media*, L., and *P. lanceolata*, L., all included under the term "*Plantain*" in the Codex, and *P. Psyllium*, L., whose seeds are also official in that work, a mucilage being prepared from them which is similar to the "*Decoctum Ispaghulæ*" of the Indian and Colonial Addendum of the B.P., but the drug used in this case consists of the seeds of *Plantago ovata*, Forsk; *Podophyllum peltatum*, L., the source of the *Podophyllum* rhizome of the pharmacopœias; *Polygonatum officinale*, All.; *Polygonum Bistorta*, L.; *Potentilla Tormentilla*, Neck., the "*Tormentille*" of the Codex; *Prunella vulgaris*, L., self-heal; *Prunus Amygdalus*, var. *dulcis*, Stokes, which yields sweet almonds, and *P. serotina*, Ehrh.; *Pulmonaria officinalis*, L.; *Pyrus intermedia*, Ehrh., with acid fruits similar to those of the mountain ash; *Rhamnus Frangula*, L.; *Rheum officinale*, Baill.,¹ *R. palmatum*, L., and the variety *langhaticum*; *Ribes nigrum*, L., the "*Cassis*" of the Codex; *Ricinus communis*, L.; *Rosa canina*, L.; *Rosmarinus officinalis*, L.; *Rubia tinctorum*, L.; *Rumex acetosa*, L., the "*Oseille commune*" of the Codex, and *R. Patientia*, L., which, together with other species of *Rumex*, yields the "*Racine de Patience*" of the same work; *Ruta graveolens*, L.; *Salvia officinalis*, L., of which the flowering plant or leaves are official in the Codex, *Arzneibuch*, and U.S.P.; *Sambucus Ebulus*, L., the source of the "*Baies d'Hydèle*" of the Codex, and *S. nigra*, L.; *Saponaria officinalis*, L., whose leaves, stem, and root are official in the Codex; *Scopola Carniolica*, Jacq.; *Scutellaria lateriflora*, L., or skullcap, the "*Scutellaria*"

¹ The fine specimen represented on Plate XXVIII is a hybrid between *R. officinale* and *R. Emodi*, but there is also some typical *R. officinale* in the collections.

of the U.S.P.; *Secale cereale*, L., on which grows the ergot of the pharmacopœias; *Solanum Dulcamara*, L., and *S. nigrum*, L.; *Spiræa Ulmaria*, L., the "*Ulmaire*" or "*Reine-des-près*" of the Codex; *Stachys Betonica*, Benth., the "*Wood Betony*" of herbalists, still retained in the Codex; *Tanacetum vulgare*, L.; *Taraxacum officinale*, Weber; *Teucrium Chamædrys* L., the "*Germandrée Chamædrys*" or "*Petit chène*" of the Codex; *Tilia platyphyllos*, Scop.; *Trigonella Fœnum-græcum*, L.; *Triticum vulgare*, Vill., wheat; *Valeriana officinalis*, L.; *Veratrum album*, L., and *V. viride*, Soland.; *Verbascum Thapsus*, L.; *Verbena officinalis*, L., a worthless drug formerly of great repute, and still official in the Codex; *Vincetoxicum officinale*, Moench, the "*Asclépiade*" or "*Dompte-venin*" of the Codex; *Viola tricolor*, L., the "*Pensée sauvage*" of the Codex, and the "*Stiefmütterchen*" of the *Arzneibuch*; and *Zea Mays*, L., whose styles and stigmas constitute cornsilk, or the "*Zea*" of the U.S.P.

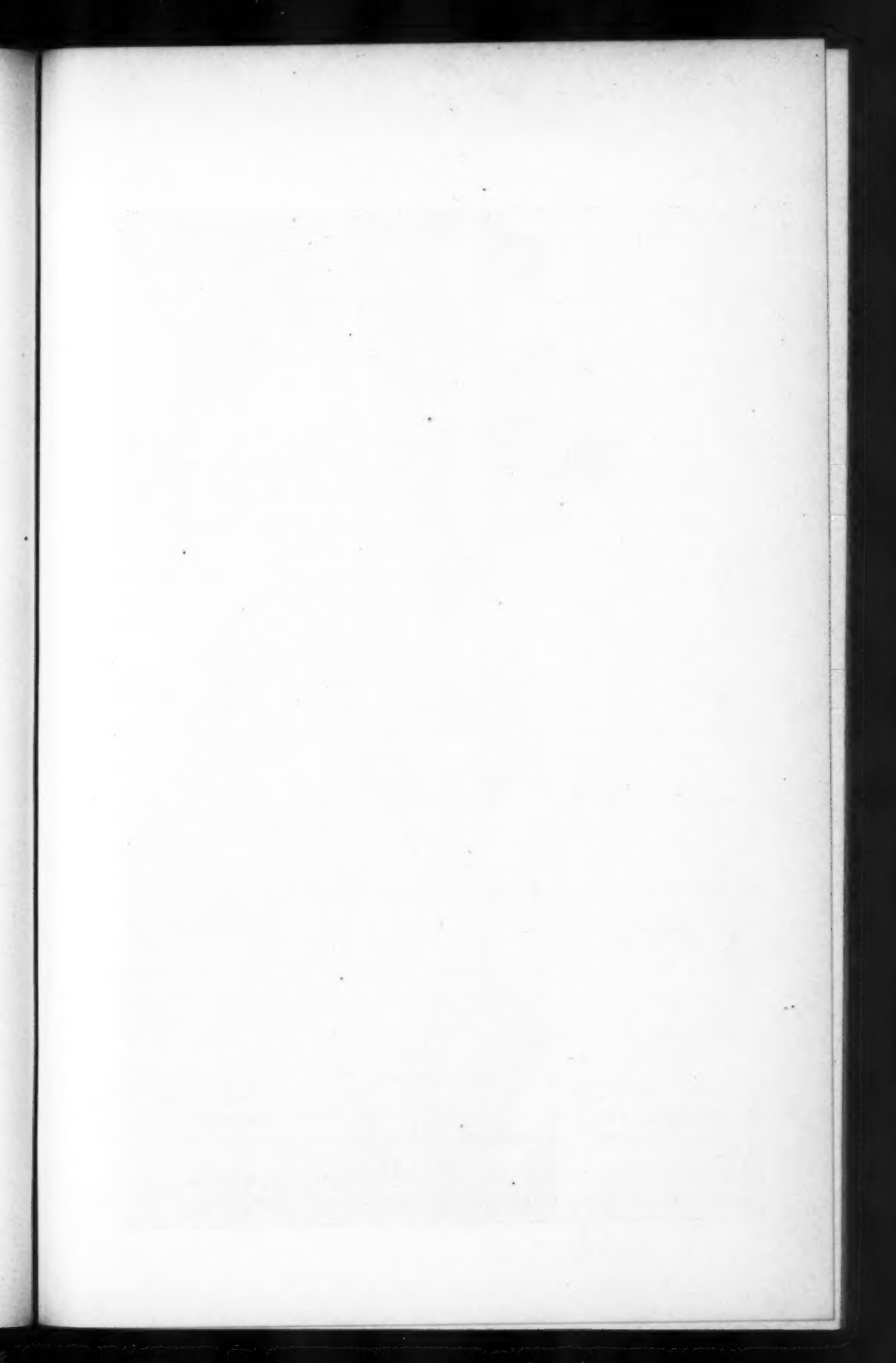
The Plant Houses.—Chief among these is the range of plant-houses completed in 1902, and situated on the north side of the garden (See Plates XXVI and XXX). This type of range is the one that has been found most suitable for educational purposes, and therefore it has also been adopted in the botanic gardens at Cambridge and Oxford. There are three houses in this range, a stove, heated to 65°—70° F., an intermediate house, heated to 55°—60° F., and a cool house maintained at about 45°—50° F., and these all open into a lean-to corridor heated to the intermediate temperature, so that access from one house to the other is made possible without the necessity of subjecting the plants to such great changes of temperature as if the houses only communicated with the outside air. Various kinds of plants are represented, and those of economic interest are distributed among the others. The medicinal plants are not numerous, but the following may be mentioned:—

In the Stove.—*Ilex Paraguayensis*, Lamb.; *Myroxylon toluiferum*, H.B.K., *Zingiber officinale*, Rosc.

In the Intermediate House.—*Adhatoda Vasica*, Nees, whose fresh and dried leaves constitute the "*Adhatoda*" of the Indian and Colonial Addendum to the B.P.; *Anamirta Cocculus*, W. & A.; *Bixa Orellana*, L.; *Canella alba*, Murr.; *Coffea Arabica*, L.; *Dracæna Draco*, L.; *Peumus Boldus*, Molina; *Phoenix dactylifera*, L.; *Picræna excelsa*, Lindl.

In the Greenhouse.—*Agathis australis*, Salisb., (*Dammara australis*, Lamb.), the Kaurie Pine, from which is obtained a resin similar to copal; *Cinnamomum Camphora*, Nees; *Drimys Winteri*, Forst.; *Eucalyptus globulus*, Labill.; *Melaleuca* sp.; *Rhamnus Californicus*, Eschsch., and *R. Purshianus*, DC.

In the Corridor.—*Aloe* sp., *Ceratonia Siliqua*, L.; *Citrus Aurantium*, L., *C. medica*, L., and *C. medica*, L., var. *Limonum*; *Dracæna Draco*, L.; *Ficus elastica*, Roxb.; *Picræna excelsa*, Lindl.; and *Pilocarpus pennatifolius*, Lem.





RANGE OF PLANT HOUSES, CHELSEA PHYSIC GARDEN.

Facing the range of plant-houses are two pits (see Plates XXVI and XXX), one a warm pit, the other a cool pit. The former contains a collection of cryptogams, such as Selaginellas, Lycopodiums, etc., and other specimens used in teaching; whereas in the cool pit one side is occupied by succulents, and the other is used for forcing purposes. A new propagating house is being added in 1906.

The lean-to-house on the west of the garden is the only one of the old plant-houses remaining. It was thoroughly repaired after the transfer of the garden, and is chiefly used as a fern house. Among its noteworthy features the examples of Wardian cases which it contains may be mentioned, as also a fine collection of liverworts and some luxuriant specimens of the male fern (*Aspidium Filix-mas*, Swartz).

The Laboratory Building, on which abuts the Curator's house, (see Plates VII and XXVI), is the distinctive feature of the Chelsea Physic Garden. It is a plain but substantial brick building, especially designed for modern educational needs under the superintendence of Professor Bretland Farmer. The main laboratory, 40 feet long by 25 wide, is on the ground floor, and opens into a small experimental greenhouse on the side remote from the main entrance (see Plate VII). It is admirably equipped for practical work, the benches being well lighted and provided with water and gas. In this laboratory there are two old oak presses which may have been used for string Dale's herbarium, although there is nothing to indicate the fact. In addition to the main laboratory there are two small private laboratories at the gable end of the building, and between them is situated a dark room for photographic work. In one of these small laboratories, viz., that which adjoins the experimental greenhouse, there is a third oak press similar to those in the main laboratory. On the upper floor of the building there is, over the main entrance, a small room which is used by the Curator. This contains a small oak press which was manifestly adapted for storing herbarium specimens, and Isaac Rand's name is cut on the inner face of one of its doors. The main room on this floor, which corresponds in size and position with the main laboratory downstairs, is fitted up as a lecture hall, while there are two small rooms over the two small private laboratories and the dark room. These two rooms, and the wall abutting on the staircase and Curator's room, are fitted with book-cases which contain the library of the late

Charles Darwin. Engravings of the garden at various periods are hung on the north wall of the lecture hall, Plates XXIII and XXV being reproduced from two of these.

At the end of May, 1904, a tin tablet recording, in the following terms, the reconstitution of the garden, was placed on the west side of the entrance to the Laboratory Building:—

This Garden was established in the year 1673 by the Society of Apothecaries of London and was at first held on lease, but in 1722 was conveyed by Sir Hans Sloane to the Society for the Encouragement of Botany.

The Garden was managed and maintained by the Apothecaries Society until the 21st January 1899, when by a Scheme of the Charity Commissioners for England and Wales the Trustees of the London Parochial Charities were appointed to be the Trustees of this Garden in the place of the Society. Provision was then made for its management by a Committee appointed by the Trustees of the Garden, the Treasury, the Lord President of the Council, the Technical Education Board of the London County Council, the Royal Society, the Society of Apothecaries, the Royal College of Physicians, the Pharmaceutical Society, the Senate of the University of London, and the Representative of Sir Hans Sloane.

The old Lecture room and Curator's residence having been pulled down in 1900, the present buildings were erected on the same site and formally opened on the 25th July, 1902, by the Rt. Hon. Earl Cadogan, K. G., a lineal descendant of Sir Hans Sloane.

Sir Joseph Savory, Bart.

Chairman.

and

Sir Owen Roberts,

Vice-Chairman of the Trustees.

Wm. Hayes Fisher, M.P.,

Chairman.

and

Charles Algernon Whitmore, M.P.

*Vice-Chairman Committee of
Management.*

Algernon Bertram. Baron Redesdale, *Chairman of the Garden Committee.*

H. Howard Batten, *Clerk.*

DECEMBER, 1902.

The potting-house and the shed, to the east of the range of plant-houses (see Plate XXVI), are to be included among the additions made in 1902, and the inscriptions on the pedestal of the Sloane Statue were also re-cut in that year.

The work of the Garden.—Medicinal plants, as such, no longer form a specialized feature of the Chelsea Physic Garden, inasmuch as the object aimed at by the body at present responsible for the management of the garden is educational in the wider sense, and the teaching of botany as a pure science has accordingly replaced the specialized study of drug-yielding plants. In associating laboratory work with the study of living plants in the botanic garden,

Chelsea has followed the example set by some of our principal university centres. This association, as has already been indicated, is a relatively modern development, and the study of systematic botany which had, until recently, been overshadowed by the rise of laboratory teaching, is now encouraged, side-by-side with the latter.

The garden, as at present constituted, is intended for work, and not for recreation. This is made apparent by the following "Rules and Regulations as to Admission to the Garden, Lecture Room and Laboratory" drawn up by the Committee, and approved on November 20, 1902:—

1. The purposes for which the Chelsea Physic Garden is maintained are:—
 - (1) To render assistance in the teaching of Botany;
 - (2) To provide material and opportunity for Botanical investigations.
2. Admission to the Garden will be by ticket, issued by the Clerk to the Trustees, and any Teacher who desires to obtain access to the Garden should, in applying for such ticket, state the period for which it is required.
3. The Garden will be accessible to Teachers and Students on week-days from 9.30 a m. to 5 p.m., except during the months of May, June and July, when it will not be closed until sunset.
4. Teachers holding tickets of admission will be allowed to introduce their Students to the Garden for purposes of study, but each Teacher will be held responsible for any damage that may be committed by his or her Students whilst in the Garden.
5. No plants grown in the open ground may be cut or uprooted without the consent of the Curator or some other responsible person directly connected with the Garden, but it is to be understood that permission to gather specimens for the purposes of study will be accorded whenever possible, but in no other circumstances.
6. No plant cultivated in the plant-houses may under any circumstances be cut except by the Curator or some other responsible person directly connected with the Garden.
7. Teachers requiring specimens for use in their own laboratories, on furnishing a list of desiderata, may be supplied with such specimens as can be spared from the Garden on reasonable notice being given to the Curator, and on the understanding that the applicant undertakes the trouble and charges of transfer of the specimens from the Garden to his or her Institution.
8. A ticket of admission to the Garden does not include access to the Laboratory Building. Any person desiring to make use of the Laboratory for purposes of research or otherwise should make special application to the Clerk to the Trustees.¹

¹ I am authorized to state that orders for a visit to the Garden will be given by Mr. Howard Batten, if application be made to him in writing. Address: Mr. H. Howard Batten, clerk to the Trustees of the Chelsea Physic Garden, 3 Temple Gardens, Temple, London, E. C.

In the first report of the Committee of Management it is stated that, in drawing up these rules, "the Committee acted on the advice of Professor Farmer, who, before submitting his recommendations to the Committee, called a meeting of the Principals of the Polytechnics, which was well attended, the interests of at least 150 botanical students belonging to the Polytechnics being represented." The wisdom of this course has been demonstrated by the fact that the rules have, so far, proved quite satisfactory.

In conformity with the suggestion made to the Treasury Committee the needs of the students of botany in the Royal College of Science have been primarily considered. The Professor of Botany in that College has been appointed Scientific Advisor to the Committee of Management, and the laboratory is chiefly used by the students of the college, "working under the direct supervision of Professor Farmer; but occasional admission is granted to other students engaged in research work." The garden itself is used more freely by individual students or by classes in charge of their teachers. Another important branch of the work of the garden, as at Regent's Park, is the supply of cut specimens to many examining and teaching bodies, such as the University of London, the Royal College of Science, a few of the metropolitan medical schools, the various Polytechnics, etc.

The courses of advanced lectures in botany delivered in the lecture hall by specialists in various branches of that science must also be included among the educational features of the Chelsea Garden. These lectures are organized by the University of London, and have been, or will shortly be, given by the following: Professor J. Reynolds Green, Sir William Dyer, Dr. D. H. Scott, Professor J. Bretland Farmer, Professor F. W. Oliver, Dr. A. B. Rendle, Mr. A. D. Hall, Mr. V. H. Blackman, and Professor A. G. Tansley.

The activities of the garden, however, are not altogether limited to educational work. Mr. Francis Darwin has been continuously engaged in research at the Chelsea Garden, and one of the smaller laboratories on the upper floor of the Laboratory Building has been placed at his disposal, while the scientific library formerly belonging to his father, the late Charles Darwin, has been accommodated in the same building, as indicated above. Sir William Ramsay has also made experiments in the garden "in connection with the nutritive value of certain classes of manures," but the Chelsea Garden is

not well adapted for this purpose, as it is only by persistent effort that plants can be made to thrive at all in an uncongenial atmosphere, such as that of London.

The system of seed exchange with other institutions which was inaugurated in 1682 is assiduously maintained, and a seed list is issued annually by the Curator. In the year 1903-04, 872 packets of seeds were received and 1,052 sent away, the recipients or donors comprising the following gardens: Kew, Dublin (Royal Botanical), Dublin (Trinity College), Cambridge, Oxford, Birmingham, Brunswick, Dresden, Erlangen, Kiel, Hamburg, Berlin, Greifswald, Ghent, Brussels, Groningen, Cracow, Görlitz, Innsbruck, Agram, Lemberg, Bucharest, Paris, Lyons (Medical), Lyons (Municipal), St. Petersburg, Palermo, La Mortola, Catania, Valencia, Madrid, Melbourne, Dunedin, and St. Louis (U. S. A.).

[The following should be consulted for further details concerning the Chelsea Physic Garden :

Memoirs, Historical and Illustrative, of the Botanick Garden at Chelsea; belonging to the Society of Apothecaries of London, by Henry Field. London, 1820.

The same, revised, corrected, and continued to 1878, by R. H. Semple, M.D. London. 1878.

The Physic Garden at Chelsea, by William Hales, Curator, in "The Garden" for August 2, 1902, p. 79.

The Chelsea Physic Garden.—First Report of the Committee of Management. London. 1905.

The History of the Society of Apothecaries of London, by C. R. B. Barrett, M.A. London. 1905. This work contains many references to the Chelsea Physic Garden, culled from the minute books of the Society. It is, moreover, indispensable to those who wish to make themselves acquainted with the history of the Society. The general reader, however, will find it necessary to obtain some preliminary information respecting the development of the British apothecary before beginning Mr. Barrett's work, as there are, in the latter, references to various legislative enactments which will not be understood without some such assistance. For this purpose see "The Apothecary Ancient and Modern of the City of London," by George Corfe, M.D., London, 1897, and the article "Apothecary" in the *Encyclopædia Britannica*, ninth edition, Vol. II, p. 198.

No attempt has been made, in the present paper, to deal with biographical details. These are, nevertheless, of great interest, and will be found, for the most part, in Field and Semple or in the "Historical and Biographical Sketches of the Progress of Botany in England, from its origin to the Introduction of the *Linneæan* System," by Richard Pulteney, M.D., F.R.S. In two volumes. London. 1790. The "Biographical Index of British and Irish Botanists," compiled by James Britten, F.L.S., and G. S. Boulger, F.L.S., F.G.S., London, 1893 (First Supplement, 1899), should also be consulted.]

In conclusion, I desire to express my best thanks to the following for the assistance which I have received from them: Mr. H. Howard Batten, Clerk to the Trustees of the Chelsea Physic Garden; Sir William Turner Thiselton-Dyer, K.C.M.G., F.R.S., ex-Director of the Royal Gardens at Kew;¹ Mr. W. Hales, Curator of the Chelsea Physic Garden; Mr. E. F. Hawes, Chief Instructor of the Practical Gardening School in the Royal Botanic Society's Gardens; Mr. J. M. Hillier, Keeper, and Mr. J. H. Holland, F.L.S., Assistant Keeper of the Museums of Economic Botany at Kew; Mr. E. M. Holmes, F.L.S., Curator of the Pharmaceutical Society's Museums; Mr. B. Daydon Jackson, F.L.S., General Secretary to the Linnean Society of London; Mr. A. W. Kappel, F.L.S., and Mr. J. W. Knapman, Librarians respectively of the Linnean Society of London and of the Pharmaceutical Society of Great Britain; Mrs. P. E. F. Perrédès; Dr. F. B. Power, Director of the Wellcome Chemical Research Laboratories; Mr. T. E. Sedgwick, Assistant Secretary to the Royal Horticultural Society; Mr. J. B. Sowerby, F.L.S., Secretary to the Royal Botanic Society; and Mr. W. Watson, A.L.S., Curator, Royal Gardens, Kew.

The illustrations, with the exception of Plate XXV, have been prepared expressly for this work, and for their excellence I am chiefly indebted to Mr. H. S. Wellcome and to the photographic staff of Messrs. Burroughs, Wellcome & Co. Plate XXV is printed from a block kindly lent by Mr. Howard Batten; the other plans I have drawn myself.

LONDON, December, 1905.

ADDITIONS AND CORRECTIONS.

Oct., 1905, p. 454, line 21, for "August 7, 1865," read "August 7, 1685."

Nov., 1905, p. 524, line 5, for "In 1784" read "In 1772."

Dec., 1905, p. 564, line 20, for "1784" read "1772."

Jan., 1906, p. 2, line 3 from bottom, for "*Prunus amygdalus*" read "*Prunus Amygdalus*."

Jan., 1906, p. 3, lines 3-4, for "sources respectively of otto of rose, hips and red-rose petals" read "sources respectively of hips, otto of rose and red-rose petals."

Jan., 1906, p. 3, line 15, for "*Ulmus campestris*" read "*Ulmus campestris*."

" " p. 4, line 32, for "*Peucedanum ostruthium*" read "*Peucedanum Ostruthium*."

¹ Sir William Dyer retired from the post of Director in December, 1905, and Lieutenant-Colonel David Prain, I.M.S., F.R.S., then Director of the Botanical Survey of India, was appointed as his successor.

- Jan., 1906, p. 5, line 25. *Veratrum viride*: Solander is frequently cited instead of Aiton as the authority for this name. For explanation see footnote, p. 526, AMERICAN JOURNAL OF PHARMACY, Nov., 1905.
- Jan., 1906, p. 6, line 2 from bottom, for *Egle Marmelos*" read "*Ægle Marmelos*."
- Jan., 1906, p. 7, line 31, for "*P. Longum*" read "*P. longum*."
- Feb., 1906, p. 71, line 24, for "order on Council" read "Order in Council."
- " " p. 72, line 18, for "years" read "years."
- April, 1906, p. 178, line 15 and line 7 from bottom, for "Watt's" read "Watts's."
- May, 1906, p. 225, line 14, for "1898" read "1899."
- June, 1906, p. 272, bottom line, for "wo" read "two."

REPORT OF THE PENNSYLVANIA STATE PHARMACEUTICAL ASSOCIATION MEETING.

HELD AT GLEN SUMMIT SPRINGS HOTEL, JUNE 26, 27, AND 28, 1906.

BY CHARLES H. LAWALL.

The opening session of the twenty-ninth Annual Meeting of the Pennsylvania Pharmaceutical Association was held in the Auditorium of the Glen Summit Springs Hotel on Tuesday, June 26, 1906.

The location of the hotel is well adapted for a convention of this kind, and the attendance at this annual meeting showed that the selection had been well made. Situated as it is on the main line of the Lehigh Valley Railroad, but a few miles from Wilkesbarre, it proved to be readily accessible to all the members in the eastern part of the State, and the large number of those from the west, from Pittsburg, Allegheny, etc., showed that they, too, considered it advantageous as a meeting place.

The meeting was called to order by President D. J. Thomas, of Scranton, and the afternoon session, which was an innovation begun last year, was primarily intended to expedite the transaction of routine business, receiving of committee reports, etc., so that the later sessions could be given up to more weighty matters of more general interest.

The report of the Secretary was first presented by Dr. J. A. Miller, of Harrisburg, in which he called attention to the large number of copies of the proceedings which remained in his hands, owing to a number of the members not having paid their dues, and, therefore not being eligible to receive them. He asked permission of the Association to send these proceedings out to druggists in the

State who were not members, in order that they might appreciate one of the benefits of belonging to the Association.

The Treasurer's report was read by Mr. J. L. Lemberger, of Lebanon, who reported a balance of \$1,476.82. He commented upon the large number who had fallen behind in the matter of the payment of dues, stating that it was rather to be expected after the phenomenal growth of the last two years in which many persons joined without really intending to continue membership.

Reports of committees and delegates were then called for.

Charles Leedom, of Philadelphia, represented the Philadelphia Association of Retail Druggists.

Prof. Joseph P. Remington and F. M. Apple, of Philadelphia, represented the Philadelphia Branch of the American Pharmaceutical Association.

Dr. Clement B. Lowe spoke in behalf of the Alumni Association of the Philadelphia College of Pharmacy, as well as of the membership of the college itself.

Mr. W. L. Cliffe represented the American Pharmaceutical Association and called the attention of the members to the fact that the Treasurer, Mr. J. L. Lemberger, was now President of the American Association. Mr. Lemberger, upon being addressed by the Chair, spoke eloquently in behalf of the Association, which is the highest one of its kind in this country, devoted to the professional as well as the trade interests of pharmacists.

Mr. Whipple, of Bridgeton, N. J., represented the New Jersey Pharmaceutical Association, while Mr. Jacob S. Beetem, of Wilmington, Del., represented the Association of his State.

A congratulatory telegram was received from Dr. Whelpley, from St. Louis.

The report of the Entertainment Committee as to the programme that had been outlined for the diversion of the members and the ladies who were present, was presented by Mr. D. E. Bransome. The Busy Bees, as this committee is facetiously termed (their names being Bransome, Byers and Busch), have never yet failed to make good when it came to entertaining the members, no matter how limited the means at their disposal.

The Report of the Committee on Papers and Queries was presented by the Chairman, Professor Charles H. LaWall, who announced that the number of papers presented at this session would

break all previous records, and that the Association would, as in the past, stand next to the American Pharmaceutical Association in the variety and importance of the papers presented, many of which had required much time in their preparation.

The president appointed an Auditing Committee, consisting of Messrs. Wray, Gorgas, and Grohman.

Mr. John C. Wallace, of Newcastle, Penna., presented the report of the Legislative Committee, in the absence of the Chairman, Mr. H. L. Stiles, of Philadelphia.

Fraternal greetings from various local associations were given by Messrs. Redsecker, Potts, Nagle, and others.

The Secretary was ordered to send telegrams expressing the desire of this Association for the success of other State Association meetings which were being held at the same time, after which the session adjourned.

The evening session was called to order at 8.30 by President Thomas, who stated that owing to the enforced absence of the Speaker who was to deliver the address of welcome to the members of the Association, that part of the evening's programme would have to be omitted. He would, however, call upon Dr. Lowe to respond on behalf of the members, to the address which should have been given. Dr. Lowe, in his customary style, entertained the members with a short speech, after which Mrs. D. F. McMurtrie, of Altoona, responded in behalf of the ladies.

Vice-President S. A. Stright having been called to the chair, President D. J. Thomas presented his annual address. It was a carefully prepared review of many important events which have taken place during the past year in legislative and trade interests, and contained recommendations for the registration of apprentices, the enactment of a law deciding the ownership of prescriptions, and the awarding of a medal for the most meritorious paper presented at each annual meeting.

The Committee appointed to consider these recommendations consisted of Messrs. Hay, Walton, Pritchard and McIntyre.

Prof. Joseph P. Remington, at the request of President D. J. Thomas, who had resumed the chair, gave a glowing outline of the work which was being done in behalf of the Procter Memorial, which was inaugurated several years ago by the American Pharmaceutical Association, and which was now assuming tangible shape.

He was seconded in this effort by Dr. Clement B. Lowe, who read a paper on the subject presented by Professor Henry Kraemer, who is the secretary of the committee appointed by the American Pharmaceutical Association to take charge of the collection of funds for this purpose and chairman of the committee appointed by the Pennsylvania Pharmaceutical Association. After the adjournment of the meeting, the Entertainment Committee provided a series of biograph views which were thrown on a screen stretched at the far side of the lawn, so that it could be viewed by the members seated along the entire length of the porch of the hotel.

The Wednesday morning session opened with the reading of minutes of the previous session, after which the report of the Committee on Trades Interests was presented by the Chairman of the Committee, Mr. Charles Leedom, of Philadelphia, after which the meeting was turned over to the Chairman of the Committee on Papers and Queries, who presented the following papers which were read by the authors in some cases, and by some one delegated to the performance of that duty when the author was not present.

"The Preparation of Tooth Paste," by Henry C. Blair, of Philadelphia.

"Simple Elixir as a Vehicle in Children's Prescriptions," by Edgar F. Heffner, of Lock Haven.

"Tinctures from Fluid Extracts," by Isaac M. Weills, of Harrisburg.

"Some Improved Formulas," by P. Henry Utech, of Meadville.

"The Sale of Cigars by Pharmacists, and Methods of Advertising the Cigar Trade," by J. B. Moore, of Philadelphia.

The afternoon session on Wednesday was opened by receiving the report of the Committee on Adulterations presented by the Chairman, Mr. R. H. Lackey, of Philadelphia. This comprehensive report, which was a compilation of the work of a number of persons, and which showed great attention to detail on the part of the Chairman who had been untiring in its preparation, reviewed the condition of the drug market at the present time, and it was stated that there is less wilful adulteration at the present time than ever before, the instances where it took place being due rather to negligence or carelessness, than any attempt to deceive. This view was supported by numerous letters from prominent wholesale and manufacturing houses, who had responded generously and com-

prehensively in outlining the existing conditions in the wholesale trade.

A short address on Sunday closing was given by Rev. Sharp, of Philadelphia, who was introduced by Mr. Bone, of Dunmore, Penna.

The Auditing Committee reported having examined the Treasurer's accounts, and having found them satisfactory.

The Nominating Committee, consisting of Messrs. Stine, Red-secker, Potts, Apple, and Byers, reported the following nominations:—

For President: George A. Gorgas, of Harrisburg.

For First Vice-President: William F. Lee, of Philadelphia.

For Second Vice-President: John C. Wallace, of Newcastle.

For Secretary: Dr. John A. Miller, of Harrisburg.

For Treasurer: J. L. Lemberger, of Lebanon.

For Executive Committee: L. L. Walton, of Williamsport, Kroll Keller, of Harrisburg, and J. B. Raser, of Reading.

The Committee on Papers and Queries then took charge, and the following papers were read:—

"Is it true that the United States Pharmacopœia is more of a Manufacturer's Handbook than a Pharmacist's Guide?" by Professor Joseph P. Remington, of Philadelphia.

"Doses in the United States Pharmacopœia of 1900," by Clement B. Lowe, of Philadelphia.

"Laboratory Notes," by Charles E. Vanderkleed, of Philadelphia.

"A Digest of the Digestive Ferments," by Franklin M. Apple, of Philadelphia.

"A New Method of Making Granular Effervescent Salts," by J. Percy Remington, of Philadelphia.

"The Physician and the Pharmacopœia," by B. E. Pritchard, of McKeesport.

"The Preparation of Thymol Iodide," by Frederick E. Niece, of New York.

"Laboratory Notes," by Willard Graham, of Philadelphia.

"Notes on the Alkaloidal Assay Processes of the New Pharmacopœia," by Professor Frank X. Moerk, of Philadelphia.

"Some Novelties in Analytic Methods," by Professor Henry Leffmann, of Philadelphia.

"Are Show Windows an Advantage in Suburban Sections?" by William G. Greenwalt, of Philadelphia.

"Some Notes on the Detection and Destination of Boric Acid," by Charles H. LaWall and H. A. Bradshaw, of Philadelphia.

On Wednesday evening, the Entertainment Committee provided a programme of popular and classic music, by Alexander's Ninth Regiment Band of Wilkesbarre, which was thoroughly enjoyed by the members, and which was followed by a new collection of biograph pictures shown as on the night previous.

The Thursday morning session opened with a discussion on the time and place of next meeting. Two places were suggested: Paxinosa Inn, at Easton, and the Bedford Springs Hotel, at Bedford Springs, Penna. After an exhaustive discussion, which was participated in by many of the members, it was decided to accept the recommendations of the Committee, and to hold next year's meeting at the Bedford Springs Hotel. Mr. Jordan, of Bedford, was elected local Secretary.

The report of the Committee appointed on the day previous to investigate the charges against a member of the State Pharmaceutical Examining Board for allowing the questions to be placed upon the market previous to the October examination, was received.

The Committee on Papers and Queries then took charge, and Dr. Clement B. Lowe, of Philadelphia, exhibited Sullivan's Prescription File, after which Mr. Louis Emanuel, of Pittsburg, showed a new Portable Oxygen Generator. Both of these were discussed very thoroughly.

The reading of papers was then resumed, and a number of papers on trade interests, especially with reference to the so-called patent medicine evil, were read, as follows:—

"The Present Status of Patent Medicines," by B. E. Pritchard, of McKeesport, Penna.

"Patent Medicine Agents or Prescription Compounders, which?" by Franklin M. Apple, of Philadelphia.

Papers in answer to the Query No. 23: "Has not the pharmacist of the past few decades sold his birthright for a mess of pottage, in joining hands with the manufacturers of proprietaries in helping them to further their interests at the ultimate expense of his own?" were read by the following members: W. O. Frailey, of Lancaster; J. Layden White, of Philadelphia; George M. Beringer, of Camden, N. J.; John F. Patton, of York, and John R. Thompson, of Pittsburg.

The reading of these papers was followed by a lengthy, and, at times, a somewhat heated discussion.

The Association passed resolutions at this session endorsing the Council of Pharmacy and Chemistry, of the American Medical Association.

The following papers were read by title, owing to a lack of time of the session to allow them to be read in full:—

“Popularizing Standard Preparations,” by M. I. Wilbert, of Philadelphia.

“The Preparation of Tasteless Castor Oil,” by J. B. Moore, of Philadelphia.

“Our Future Pharmacists or a Labor Problem,” by F. M. Siggins, of Meadville, Pa.

“Effervescent Solution of Citrate of Magnesia,” by Fred. S. Nagle, of Wilkesbarre.

“What is the Most Effective Method of Advertising for the Retail Druggist,” by Lorne E. Hastings, of Philadelphia.

“Does a Soda Fountain Pay?” by James S. Gleghorn, of Pittsburgh.

“How the National Association of Retail Druggists has Benefited Retail Druggists,” by Thomas H. Potts, of Philadelphia.

The report of the Committee on President's Address, endorsing most of the recommendations made therein, was the concluding feature of the final business session.

The Evening Session was taken up, as is the custom, by the installation of the incoming officers, the Executive Committee, and the Entertainment Committee, together with brief addresses by a number of the ex-presidents of the Association who were present.

The hotel orchestra furnished music for the Choral Society of the Association, which was organized and conducted by F. T. Wray, of Apollo, Pa., to whose successful efforts the members of the Association owed a most enjoyable evening.

In reviewing the work of the Association for the year, credit must be given to the members for the hearty support which they gave to the officers in their attendance at the business sessions. During the past few annual sessions, an almost continuous rainfall has enforced attendance at these business sessions, but it is a noteworthy fact, and one which speaks well for the future of the Pennsylvania Pharmaceutical Association, that notwithstanding the continued clear weather, which was as fine as though it had been ordered for the occasion, the attendance at the business sessions was better even than

on the previous occasions referred to. The ladies, many of whom were present, were entertained, as usual, during the business sessions, by euchre parties, carriage drives, guessing contests, bowling contests, etc., and it was the opinion of nearly everybody that the Association never had a more enjoyable or a more profitable meeting in its history. The one disadvantage of the location was the fact that the hotel is so near the railroad, that the passage of the many through trains made the efforts of some of the speakers fruitless, and it was customary, after the first day's sessions, to stop the proceedings until the train had passed by.

Many of the members remained at the hotel for the balance of the week, some of them taking side trips, as to Wilkesbarre and nearby points of interest, and it was very evident from the spirit shown that more and more of the members are looking forward each year to making this particular week a period of enjoyment as well as profit.

ABSTRACTS OF PAPERS.

FORMULA FOR TOOTH-PASTES.

By Henry C. Blair.

The author stated that the difficulty usually experienced in formulas for tooth-pastes is found in that the liquids and solids do not stay mixed; that the glycerine separates on the top, and the sediment goes to the bottom in such a manner that the preparation is useless. He suggested a formula which had proven satisfactory in his hands, and which was free from this objection. The formula was as follows:—

Soft soap, made from cotton-seed oil, 1 ounce; glycerine, 8 ounces; starch, $\frac{1}{2}$ ounce; water, $\frac{1}{2}$ fluidounce; precipitated, carbonate of calcium, 8 ounces; oil of peppermint, $\frac{1}{2}$ ounce; coloring matter as desired.

A glycerite of starch is first made with the starch, glycerine, and water; the soap is then added, followed by the coloring and flavoring ingredients, and a thorough mixture is made. The precipitated chalk, which should be bolted through a No. 14 bolting-cloth sieve, is then gradually added, and the whole worked up into a smooth paste. The author suggests that any desired flavor may be used, and that carmine coloring seems to be more popular than any other. If made in large quantities, he suggests the use of a putty

machine, or a bread mixer, or some mechanical device for thoroughly stirring it, as it becomes very tough, and requires considerable power to mix it in large quantities. For filling the tubes, a sausage stuffer has been found most advantageous.

SIMPLE ELIXIR AS A VEHICLE IN CHILDREN'S PRESCRIPTIONS.

By Edgar F. Heffner.

The author suggests that in many instances physicians are either not aware, or do not realize the amount of alcohol which is present in simple elixir, and in prescriptions for children, several of which were submitted as having been taken from the author's files. The amount of alcohol sometimes reaches a proportion which would not be given were the physician made aware of the condition of affairs. He also gave an example of a prescription containing sodium bromide, chloral hydrate, and simple elixir, in which a layer of chloral alcoholate separated out sometime after dispensing, which, if unnoticed, would allow the patient to take all of the chloral in the first dose, as the chloral alcoholate is the lighter of the two liquids and forms the top layer. He suggests the use of an aromatic water as a vehicle in all of these types of prescriptions as being certain to obviate any danger. The value of these suggestions was readily understood, and the secretary of the Association was directed to have 100 copies of the paper prepared, one of which was to be sent to each medical journal in the United States.

TINCTURES FROM FLUID EXTRACTS.

By Isaac M. Weills.

The author takes the view that the using of standardized fluid extract for making tinctures of powerful drugs would lead to greater uniformity than the present method of preparation where the pharmacist may, possibly, have a drug which is much higher than the allowable standard, and thus make a preparation which is more powerful than a similar preparation made from a different lot of the drug. He also comments on the lack of care in collecting drugs at the proper season in order to get their greatest efficiency.

SOME IMPROVED FORMULAS.

By P. Henry Utech.

The author suggests that in the official spirit of peppermint, a much more satisfactory preparation can be made by allowing the

peppermint herb to macerate in water for several hours, to free it from the drug extracted. By this means the resulting spirit will have a more permanent green color than when made according to the official directions. He also suggests that doubling the quantity of peppermint herb gives a decided improvement, and that the same criticism may apply to a spirit of spearmint, both as to the method of preparation and the quantity of herb used. He suggests a method of circulatory displacement, in making tincture of iodine, by suspending the iodine and potassium iodide near the surface of the alcohol in a muslin bag. He suggests an improvement in Warburg's tincture of the National Formulary in that the ingredients be macerated for forty-eight hours, instead of digested, as in the present directions, and he also suggests the use of quinine bi-sulphate in place of sulphate in this preparation on account of its greater solubility.

THE SALE OF CIGARS BY PHARMACISTS.

By J. B. Moore.

The author states that the sale of cigars by pharmacists has steadily grown for a number of years until now they have become an important part of the stock of a well-equipped drug store, being no longer considered as a side line in the better class of stores. He states that many druggists make a mistake of not catering to the popular demand, or to individual preferences for certain brands of cigars, and gives advice as to how to arrange the display stock of this kind to the best advantage. He dwells at some length on the proper method of keeping the stock in prime condition, as there is no quicker way to lose the cigar trade than carelessness about this feature. Carefully written circulars should frequently be distributed. Neat, catchy and attractive signs and show cards should be placed in conspicuous positions; he presents a number of forms for show cards, and also suggests wording for many catchy signs to help this feature of the trade.

IS IT TRUE THAT THE UNITED STATES PHARMACOPEIA (8TH REVISION)
IS MORE OF A MANUFACTURER'S HAND-BOOK THAN A PHARMACIST'S
GUIDE?

By Prof. Joseph P. Remington.

The author states that, notwithstanding the many criticisms and discussions on the Pharmacopœia which have appeared in the phar-

maceutical and medical journals during the past year, no attempt has been made by the chairman of the Committee of Revision to make answers except in the few instances when he happened to be present at a meeting where the subject came up. It is interesting to observe that the questions which occasioned the most discussion in the Committee of Revision have been criticised the least up to the present time with the possible exception of the dose question. It is natural to expect that there should be criticism, and it indicates the widespread interest in the work itself. The subject of the adulterations in medicine and food, which has become so important to the laity recently, has been responsible for the close scrutiny given to standards such as are set forth in the Pharmacopœia. The function of the Pharmacopœia is not to lead in the matter of introducing new remedies, but to control, to select, and to devise standards, and to give its stamp of authority to preparations in general use by improving them and securing uniformity and strength. The criticism that it has become a book of standards is a just one; that is its primary function. It is certainly to be considered a manufacturer's hand-book because there is no doubt that the pharmacist of to-day sells more products manufactured by others, than he does preparations made by himself; and it is a pharmacist's guide, because, by its use, the pharmacist is enabled to keep the manufacturer's goods up to the standard. It must be recognized that the number of preparations which can be more economically manufactured on a large scale, is continually growing, and it would be a suicidal policy for the pharmacist of the present time to make many of the preparations which were made by the pharmacist of twenty-five or thirty years ago. The policy of the present Pharmacopœia has been to encourage the manufacture of every preparation that could possibly be made by the retail druggist. Many valuable suggestions were contributed by representatives of the manufacturing interests, and elaborate experiments were made by individual members of the committee with the sole object of encouraging the pharmacist to make many preparations for himself. The making of one's own preparations would not only increase the standard, increase the actual practical knowledge of the sciences, elevate the pharmacist above the mediocre ability of the tradesman, and educate the assistants that he employs, but would, above all, increase the respect of the physician who depends upon him for accurate and safe phar-

maceutical knowledge, and it can, therefore, be truly said, that the Eighth Revision of the United States Pharmacopœia has furnished, after great labor, standards for manufacturer's goods, but it has not neglected its no less important duty, that of furnishing a reliable pharmacist's guide.

DOSES IN THE UNITED STATES PHARMACOPŒIA OF 1900.

By Clement B. Lowe, M.D.

The author states his disinclination to join those who criticize simply for the sake of criticism, but desires to call attention to a few facts in connection with the feature of doses in the Pharmacopœia. He states that this is the second time that doses have been included in the United States Pharmacopœia, as they were previously given in 1830, when the doses of *Materia Medica* articles alone were given. After tabulating a number of specific instances, the author concludes that the doses as given in the present Pharmacopœia are rather less than the average as given by other authorities. He concludes by making a few comments on some of the changes in preparations and titles, and praises the general excellency of the work.

LABORATORY NOTES.

By Charles E. Vanderkleed.

Spirit of Nitrous Ether. The author answers the query as to whether the spirit prepared from concentrated nitrous ether meets the requirements of the Pharmacopœia for strength in the affirmative with the proviso that the proper precautions must be taken. He states that he has never found a sample of the concentrated nitrous ether under strength, but that carelessness in diluting would result in an inferior preparation. The best method of diluting the spirit is to thoroughly chill the bottle containing the concentrated nitrous ether, and then open it with the neck below the surface of the alcohol, which should be of slightly less volume than that necessary to dilute the whole quantity of the bottle. By then making an assay, using an inverted burette for a nitrometer, uniform results can be obtained. He states that no allowance is made for vapor tension in the U.S.P. calculations of the ethyl nitrate strength of this preparation, which correction would make the result slightly lower. The author criticizes the U.S.P. pepsin assay by stating

that it is very difficult to thoroughly disintegrate the coagulated egg albumin by means of a glass rod tipped with rubber as directed, but that vigorous shaking is quite effective, and he states that the strict method of inverting the bottle once every ten minutes should be adhered to, as a more vigorous shaking gives the sample too great an advantage. With reference to the U.S.P. test for phenol and cresol, the author states it is much easier to apply this test when 5 c.c. of each of the reagents are used instead of one as directed, and furthermore states, that as much as ten per cent. of phenol can be added to cresol without being detected by this test. He advocates the use of iodeosin as an indicator in alkaloidal assay, as it gives more delicate readings than any of the other indicators used in this class of work.

A DIGEST OF THE DIGESTIVE FERMENTS.

By Franklin M. Apple.

The author presents a study of the digestive ferments used at the present time, giving elaborate tabulations of the comparative number of times each was prescribed in one year, also giving the number of physicians prescribing the substance in each case. Several points are of interest in the examination of this tabulated matter. The very frequent prescribing of proprietary digestive mixtures was noticed, especially the predominance of starch-digesting compounds, and the very infrequent prescribing of pepsin, and almost complete neglect of pancreatin were very surprising features. He appends extracts from the literature of proprietary manufacturers setting forth the extravagant claims made for some of these digestive mixtures. In conclusion, he states that there is no doubt that the animal digestive agents are being replaced to a large degree by those of vegetable origin, and recommends that a higher test of pepsin should be made official, that the purity of pancreatin should be improved, and that diastase of malt should receive greater attention as a digestive, and comments upon keratin coated preparations of such digestive agents as are desired to reach the intestines before exerting their action.

A NEW METHOD OF MAKING GRANULAR EFFERVESCENT SALT.

By J. Percy Remington.

The author comments upon the disadvantages of the present method of granulating the sticky mass which results after heating

the ingredients together, and making the granular effervescent salts whereby a great deal of the material is lost by becoming so finely powdered as to be of no commercial value. He suggests the use of a device which he exhibited which consisted of a sieve of Number 6 meshed galvanized wire, mounted on a frame in such a way as to permit a solid bottom to be inserted. An ordinary pie crust roller completes the apparatus which is to be used as follows: After preparing the mixture, it is spread uniformly on the sieve while the bottom is in place, and the apparatus is then placed in a hot closet or oven at the proper temperature. When the mass has begun to soften and has become thoroughly moistened, the apparatus is removed from the oven, the solid bottom is withdrawn, and the sieve frame is placed over a receiving box. The roller is then passed over the soft mass, which is thus forced through the sieve in such a way as to cut it into uniform particles with absolutely no waste in the shape of fine dust.

THE PHYSICIAN AND THE PHARMACOPŒIA.

By B. E. Pritchard.

In introducing the subject the author states that when we speak of the pharmacopœia in conversation with a physician, we talk in what to him is an unknown tongue, and he gives a number of instances in support of his contention that the real difficulty lies in the fact that physicians, as a rule, know little and care less about the pharmacopœia, a condition which is due to the lack of reference to it with sufficient emphasis in the Medical College courses. He calls attention to a resolution which was offered last year at the N.A.R.D. to put a corps of competent detail men in the field, to exploit to the physicians the U.S.P. and N.F. formulas, and he states that until that association is financially able to do this work, it is the duty of the individual druggist to acquaint the physicians in his own neighborhood with these important subjects.

THE PREPARATION OF THYMOL IODIDE.

By Frederick E. Niece.

The author suggests the following formula as having given very satisfactory results in his hands for the preparation of the foregoing compound: Thymol, 1 ounce; potassium hydroxide, 1 ounce; potassium iodide, 1 ounce; iodine, $\frac{1}{2}$ ounce. Dissolve the potassium

hydroxide in one pint of warm water, then dissolve the thymol, which should be very finely powdered in this solution, then dissolve the potassium iodide in one pint of water, and dissolve the iodine in this solution which may be called Number 2. Combine these two solutions by mixing with constant stirring, and allow the mixture to stand for a time. Add one pound of chlorinated lime to two gallons of water, and pass chlorine gas into the solution for a few minutes. Place this solution in a five-gallon earthen vessel, and add the combined solutions previously referred to, mixing well by constant stirring. In a few minutes a copious reddish brown precipitate will form, which should be allowed to completely settle, then wash with large quantities of water acidulated with hydrochloric acid, using six ounces of acid to the gallon of water. This frees the precipitate from excess of lime and alkalies. Follow this treatment by washing thoroughly with pure water until the water fails to red. den blue litmus paper. Dry the precipitate at a temperature of not more than 98 degrees F. The yield should be from four to five ounces at a cost of from twenty to thirty cents an ounce. If the process is carefully carried out, the product will answer all the official requirements.

LABORATORY NOTES.

By Willard Graham.

Some interesting analytical data obtained in the examination of a large number of samples were presented which embraced the following substances: Acetone, acid benzoic, acid phosphoric, antimony and potassium tartrate, asafoetida, belladonna leaves and root, cochineal, cresol, ether, guaiacol, oil of camphor, oil of citronella, oil of cloves, oil of coriander, oil of lavender flower, oil of lemon, oil of sandal-wood, mace, gum opium, potassium iodide, resorcin and castile soap.

NOTES ON THE ALKALOIDAL ASSAY PROCESSES OF THE NEW
PHARMACOPŒIA.

By Frank X. Moerk.

The author gives an elaborate tabular arrangement of some of the details of the assay processes which upon careful examination discloses several important points. First: Comparison of the alkaloidal strength of drugs and their preparations shows that the usually relied upon statement that 1 c.c. of a fluid extract is the equivalent

of 1 gramme of a drug, is not correct in all cases, as shown by the fluid extract of aconite, hydrastis, nux vomica, pilocarpus, ipecac, conium, colchicum, and hyoscyamus. Second: Many of the so-called 10 per cent. tinctures do not represent exactly 10 per cent. of the drug, such as tinctures of stramonium, aconite, hyoscyamus, colchicum, physostigma, hydrastis, cinchona, and nux vomica. Third: In the case of extracts there is noted the same variations from the commonly accepted strength as compared with the drug. Fourth: The alkaloidal factor, as given in each assay process, does not always coincide with the factor as given in the tables under the volumetric solutions. Fifth: An interesting tabulation is given of the amount of decinormal acid neutralized in each assay process.

SOME NOVELTIES IN ANALYTIC METHODS.

By Prof. Henry Leffmann.

First: Precipitant for nitrates; a new compound has been discovered which produces a white flocculent precipitate in dilute solution of nitrates. The systematic name of the body, which is a complex pyrrhol derivative, is diphenyl endanilo-dihydrotriazol, which has wisely been given the common name of nitron. The weight of the precipitate collected from a solution cooled to zero centigrade collected and weighed on the tared filter multiplied by a point 167 — HNO_3 . Second: a volumetric determination of sulphates is described, which depends upon the fact that benzadin sulphate is very sparingly soluble in water and acids, and that benzadine hydrochloride can be titrated like a free acid with sodium hydroxide, using phenolphthalein as an indicator. Third: The detection of potassium by a new precipitant found in the commonly used photographic developer called eikonogen, which is a sodium naphthol sulphinate. This reagent is sufficiently delicate to detect the potassium radical in cold solutions of potassium chlorate and potassium acid tartrate. Fourth: The detection of ammonium compounds by a method more delicate than an assay test is accomplished by the addition of a few drops of a 10 per cent. solution of potassium iodide followed by a solution of sodium hypochloride added drop by drop, in the presence of even very small amounts of ammonium compounds a brown precipitate of the so-called nitrogen iodine is formed. Fifth: The reaction with sesame and hydrochloric acid can be used for detecting cane sugar in milk sugar, since the latter

does not give the same reaction with this test. Sixth: The detection of abrastol is accomplished by adding a reagent prepared by dissolving mercury in twice its weight of nitric acid and diluting the solution with five volumes of water. This produces a yellow color deepening to a reddish color in the presence of abrastol. The test can be applied directly to milk, but with fruit juices, etc., the abrastol must be separated in a manner similar to that in testing for salicylic acid.

SOME NOTES ON THE DETECTION AND ESTIMATION OF BORIC ACID.

By Charles H. LaWall and H. A. Bradshaw.

The authors comment upon the commonly used turmeric paper test which is used for the detection of boric acid, but which, as usually applied, is not as sensitive as is desirable. The use of turmeric tincture, and the application of the test to the liquid directly which is to be evaporated so as to leave a thin film on a watch glass, is the method advocated. With milk the test is very satisfactory, as applied directly. With meat products, it is only necessary to heat the sample with water, and then take a small amount of this aqueous liquid for the test. With substances which have no ingredient which would leave a film, such as is left in the two foregoing cases, the authors propose the use of a 5 per cent. gelatin solution. By the use of this method, boric acid can be readily detected in sea water. The proportion is shown approximately by the intensity of the red color which results when boric acid is present. Some experiments were made with the Gladding method for the estimation of boric acid, by distillation with methyl alcohol, to determine the rate with which the methylborate distils over, and it was found that it is necessary to distil more than 100 c.c. of the methyl alcohol in order to recover all of the boric acid, as on three separate distillations, where 100 c.c. were collected, 95 and 96 per cent. respectively were recovered. It was also found that large amounts of sodium chloride had no effect upon the accuracy of this process.

ARE SHOW WINDOWS AN ADVANTAGE IN SUBURBAN SECTIONS?

By William G. Greenwalt.

The author deploras the lack of attention which is given to this important department of a drug store, giving instances of good and bad methods, and the effect on possible customers. He states that

you cannot attract customers unless you put something attractive into the windows, and advocates the idea of having seasonable displays, which should be looked after by the proprietor himself, or delegated to some active, alive, and energetic clerk. It is the one legitimate method of increasing business, and the natural outcome of a careful study of it will be a better income, greater profits, increased interest in business and a more healthy atmosphere about the establishment.

THE PRESENT STATUS OF PATENT MEDICINES.

By B. E. Pritchard.

The author takes the subject of Query No. 23, which asks whether the pharmacist has sold his birthright for a mess of pottage in promoting the sale of proprietaries, and answers it emphatically in the negative. He admits that it appears upon the surface that overmuch attention may have been given, and an undue amount of energy expended in efforts to restore former profits upon proprietary medicines, but he states that patent medicines are not all bad, nor are all proprietors deserving of being classed as brigands simply because of the presence of a few yellow streaked ones in their ranks. He states that the traducers of proprietary medicines are vicious iconoclasts, in that they do not suggest anything to take their place, and in conclusion states his belief that those who have carried on the crusade have taken up arms against a sea of imaginary troubles.

PATENT MEDICINE AGENTS OR PRESCRIPTION COMPOUNDERS, WHICH?

By Franklin M. Apple.

The author classes the patent medicine and proprietary manufacturers in their relation to the professional pharmacists, as like unto oil and water which will not mix without an emulsifying agent. He deplors the extravagant claims made for their wares by most of the manufacturers of patent medicines and proprietaries, and calls attention to the exposure of the magazines, and of the lay press during the past year. In support of his view, he quotes an editorial from the *World's Work*, entitled "The Patent Medicine Muzzle on the Press," and advocates missionary work in educating druggists and doctors up to the possibilities in the use of standard preparations of the U.S.P. and National Formulary.

ANSWER TO QUERY No. 23.

By W. O. Frailey.

This query, which asks whether the pharmacist has sold his birth-right for a mess of pottage in furthering the sale of proprietary remedies, is answered in the negative by the author, who states that his views have been modified by the continued and largely increasing habit by physicians of prescribing sarsaparillas and other specifics of proprietary manufacture on written prescriptions. He calls attention to the gigantic accomplishments of the N.A.R.D. which has enabled the retailer to negotiate with the manufacturer of proprietaries for honest open markets, and to demand protection from demoralizing influences.

ANSWER TO QUERY No. 23.

By J. Leyden White.

The author of this paper has, as in the foregoing case, answered the query in the negative. He states that the query assumes something which is not a fact, and ingeniously traces the first proprietary remedy to Galen, the Father of Medicine, bringing the subject down through the succeeding ages to the present time. He states that the average physician of to-day depends very little upon diagnosis, but goes upon the principle that what has helped ninety-nine out of a hundred similar cases, will most likely help the hundred and first. In considering the commercial side of the question, he estimates that 40 per cent. of the average retail pharmacist's business is in patent medicines, that if these were abolished, 40 per cent. of the retail druggists would fail. In conclusion, he says that the query is born of a temporary condition of the times, that condition arises from the agitation of the so-called reformers who are trying to put shackles on Father Time, trying to reverse natural laws, trying to change progression to retrogression.

QUERY No. 23.

By George M. Beringer.

The author handles this query in an allegorical manner and takes the extreme degree in stating the affirmative. He quotes Mr. William C. Alpers, who portrays the pharmacists as upon the raft of commercialism floating toward the Niagara of annihilation, and states that succor and safety come in the nature of the lifeline of profes-

sionalism. In the writer's opinion the raft of commercialism is nearing a whirlpool, he says the time has arrived when it becomes imperative for pharmacists to seize the lifeline.

QUERY No. 23.

By John F. Patton.

The author states that his answer must be tinged with regret at the loss of that which can never return, namely: wasted time, and lost opportunity. He says for years all the forces of condition and circumstances, to say nothing of his education and training, have conspired to make the pharmacist a tradesman, and regrets that there seems to be a lack of professional pride and ambition in the pharmacist who is willing to trade in and to a certain extent stand sponsor for the many nostrums he is daily called upon to hand out over his counter, instead of making an effort to produce and sell his own goods.

WHAT SHOULD BE THE ATTITUDE OF THE PHARMACIST IN REFERENCE TO THE CRUSADE AGAINST PATENT MEDICINES?

By John R. Thompson.

The author states that it is either right or wrong to sell proprietary medicines to the public, and while allegations have been made concerning nostrums in the lay journals, the pharmacist has so far maintained an attitude of guilty silence. He admits that some harm is worked on the public by charlatans in the trade, as there is harm worked by the bad element in every calling, but that the traffic has become so enormous that the goods are sold simply as merchandise, without any responsibility being assumed by the seller. He believes that the selling of ready-made remedies is honorable and legitimate, providing that the medicines themselves are honorable and legitimate, and concludes by saying it is the duty of the pharmacist to protect his business, to aid the crusaders where they have discovered a real wrong, but to oppose them most heartily when they attack what is legitimate and right.

POPULARIZING STANDARD PREPARATIONS.

By M. I. Wilbert.

The author compares the curriculum of the average college of pharmacy of to-day and that of the average college of medicine of to-day,

with the curricula of these institutions thirty years ago, and states that materia medica, pharmacy, and chemistry, have been so far crowded out by other branches in the medical college that it has led to a condition which it would be well to remedy. He advises the pharmacist to enlarge his fund of general scientific information, so as to be able to intelligently direct the physician in the application and use of official remedies, and that a more frequent and liberal interchange of opinions and experiences will be necessary, and will go far towards establishing the sense of responsibility the pharmacist should have as being in part the guardian of the public health. He believes that the time has come for radical changes in the practice of pharmacy, but that much will depend upon the pharmacist's ability to take advantage of the opportunities now afforded to him, and to live up to the responsibilities that he has assumed.

THE PREPARATION OF TASTELESS CASTOR OIL.

By J. B. Moore.

The following formula is suggested for a mixture to disguise the repulsive taste of castor oil: Compound tincture of cardamom, 2 drachms; cinnamon water, 6 drachms; castor oil, 1 fluid ounce; brandy, q. s. Mix the compound tincture of cardamom in cinnamon water, add the castor oil carefully and squirt four or five drops of good brandy on the surface. He suggests a label for prepared castor oil which contains explicit directions as to how to take the dose, and gives a number of instances of his experiences in building up a trade in this particular method of administration of a usually nauseous substance.

EFFERVESCENT SOLUTION OF CITRATE OF MAGNESIA.

By Fred. S. Nagle.

The following is suggested by the author as giving a very satisfactory preparation:—

Citric acid, 1 ounce; magnesium carbonate, $\frac{1}{2}$ ounce; potassium bicarbonate, $\frac{1}{2}$ drachm; spirits of lemon, 5 minims; simple syrup, $1\frac{1}{2}$ ounces. Boiling water to make 12 ounces. The solution is made by directions similar to those of the U.S.P. and is stated to give a more permanent preparation.

OUR FUTURE PHARMACIST, OR, A LABOR PROBLEM.

By F. M. Siggins.

The author states that the ordinary pharmacist of the present time has no room for a laboratory such as he should have if he is to follow up his college education. He would advocate the opening of the college doors to all who desire an education, irrespective of previous educational requirements.

WHAT IS THE MOST EFFECTIVE METHOD OF ADVERTISING FOR THE RETAIL DRUGGIST?

By Lorne E. Hastings.

The author states that there is no one rule for effective advertising. He advocates intelligent and systematic use of window displays, the maintenance of a cleanly condition of the door, and prescription department, advantageous arrangement of goods in show cases, and systematic and periodic circular advertising in the locality of the store. He advertises the wrapping of small folders containing seasonable advertisements with each package sent out, and states that this form of advertisement, if persistently and consistently followed, will materially increase sales.

DOES A SODA FOUNTAIN PAY?

By James S. Gleghorn.

The author states that a great deal depends upon the locality, as the policy which would prove successful in one case might be a failure in another. It is not so necessary to have a good fountain as it is to keep the one you have in good condition. He cites instances of mistakes that have been made by druggists to put in expensive fountains simply to keep up the style, and calls attention to the necessity for politeness on the part of the soda dispenser. He advises the pharmacist to get out a line of new drinks every week throughout the season, and to furnish a printed list showing the variety and prices of drinks served. He does not believe in giving free drinks, or in distributing free tickets with other purchases, and concludes by saying that it takes money, pure water, clear ice, rich fruit syrups, work, and know-how to make a soda fountain pay.

HOW THE N.A.R.D. HAS BENEFITED THE RETAIL DRUGGIST.

By Thomas H. Potts.

The author says that the status of the retail druggist at the present time is not to be envied, and yet it is immeasurably superior to what it would be were it not for the protection of the N.A.R.D. This Association protects its members from encroaching cut-rate competition and aggressive and pernicious legislation. It demands of its members more generous support and greater activity in meeting the various disturbing issues which confront it. He endorses the direct contract, serial numbering plan, and states that mail-order business has been entirely eliminated in this class of goods. The Association is in a position to help every druggist to improve his position as a business factor whether he be located in a country district or in a city store. He concludes that an organization of 30,000 retail druggists who are working together for the betterment of their kind, financially, morally, and professionally, is a power in the land, as it ought to be, and every druggist who is imbued with the spirit of craft kinship and realizes the harmonizing power of co-operation should be a member of this organization.

COMMENTS UPON THE U.S.P. INORGANIC CHEMICALS.

By VIRGIL COBLENTZ.

(Continued from p. 311.)

ACIDS, INORGANIC.

Sulfuric Acid.—The strength of 92½ per cent., known commercially as 66 Be., has been retained because this represents the commercial acid as used in the arts and decided upon by the Manufacturing Chemists' Association. Such a strength acid cannot be further concentrated in platinum without injury to the apparatus. It is estimated that the loss in platinum in concentrating this acid amounts to from 5 to 10 cents per ton, while an acid of 95 per cent. will cause a loss about four times as much.

Again, the various other industries employ a 92½ per cent. acid, as, for example, the petroleum refiners find this strength best adapted to their wants; a stronger acid causing discoloration of the oil.

The amount of this acid employed in pharmacy amounts to but

very little, hence we must adapt ourselves to the commercial conditions.

Hydrochloric Acid.—A 31.9 per cent. or 20 Be. is the usual acid employed in the arts. Another acid used much industrially is the 22 Be., which is about 36.18 per cent. strength.

Nitric Acid.—The strongest nitric acid used in the arts and manufactures is the 42 Be., which represents a strength of 68 per cent. Hence, for like reasons cited under sulfuric acid, the strength of this is made to conform to commercial standards.

Not the least difficulty should be experienced in procuring the above acids fully up to the pharmacopœial standards.

Boric Acid.—The strength of 99.8 per cent. allows for the presence of about 0.2 per cent. of moisture, such possible impurities as calcium and sodium sulfate are not found in more than traces in boric acid of reliable origin.

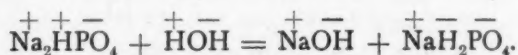
Hydrobromic Acid.—In order to provide against the presence of other acids, two methods of titration have been introduced, namely, by neutralization and by precipitation.

Sulfuric Acid, Aromatic.—In order to secure uniformity in strength, based on the percentage of absolute sulfuric acid present, as is the case with our dilute acids, the quantity of sulfuric acid has been placed at 111 c.c., or 203.24 grammes.

Phosphoric Acid.—It will be noted that a saturated solution of sodium chlorid is added to the solution of phosphoric acid to be titrated, which is done for the following reasons: When titrating phosphoric acid under ordinary conditions the end-reaction is not sharp, phenolphthalein giving a rose tint when two-thirds of the acid has been neutralized, thus:



According to the phenolphthalein reaction, di-sodium phosphate is slightly alkaline. If, however, this solution is diluted, the coloration disappears, for dissociation takes place as follows:



In order to suppress this hydrolysis, a slight excess of sodium chlorid is added, the end-point of titration is then very sharp.

A sample of phosphoric acid which assayed 82.8 per cent. gravimetrically (as magnesium pyrophosphate), titrated 82.35 per cent.

from sulfuric acid, various devices were tried, such as the use of two or more wash-bottles, the use of lead oxid, etc. None of those tried were sufficient to retain all the vapors of sulfuric anhydrid which are given in the operation (especially when Cu is employed) and carried over mechanically with the sulfurous oxid.

The chief objection to the copper method is that the metal becomes quickly coated with an insoluble layer of sulfates, when reaction ceases. This is less marked with the spiral-formed turnings than with the granulated or filings. Charcoal is a cheaper and far more convenient material, and when properly carried out the method will yield a stronger solution than the copper.

The rapid deterioration of sulfurous acid solutions may be noted on the following two samples.

	Per cent.		Per cent.
June 17	Sample I, 6.56	Sample II, 4.54	
" 18	" 6.40	" 4.43	
" 23	" 6.08	" 4.27	
July 1	" 5.92	" 4.20	

The old method of titrating by adding the standard iodine V.S. directly to the diluted acid, is open to the error introduced through the reducing action of the hydriodic acid formed on the sulfur dioxide. The present method (Giles and Scheerer, *Four. Soc. Chem. Ind.* iv, 303) avoids this in adding an excess of the iodine solution and titrating back with the thiosulfate V.S. The results are very accurate and concordant.

Alum.—In revising this text, the question arose as to the advisability of retaining the *Potassa Alum* or introducing the *Soda Alum*; also of rigidly excluding the *Ammonia Alum*. A letter directed to one who is thoroughly informed upon this subject, brought the following facts: "When ammonium sulfate was very much cheaper than it is at present, and before the importation of the potassium sulfate, now obtained very cheaply from the Stassfurt deposits in Germany, ammonia alum was made; but now ammonium sulfate is rarely used in making alum. It has happened that where ammonia alum is manufactured for special purposes, the mother liquors from it were evaporated together. A small quantity of alum of commerce may have been found to contain ammonia from the above-named cause, but the proportion of ammonia present must have been very small.

"Soda cannot be used for the manufacture of alum for the reason

that it makes a very soluble salt, and impurities associated with the sulfate of aluminum and sulfate of sodium used, are not removed by crystallization from the alum. Again, in my experience, soda alum cannot be crystallized except from strong solution of sulfate of aluminum, in which it is slightly soluble, and even when obtained, it effloresces so that it loses water of crystallization, under ordinary circumstances, destroying the crystalline appearance of the salt and rendering it not constant in strength."

Alumini Sulphas.—The U.S.P. stands almost alone in recognizing a salt with 16 molecules of water of crystallization, while all other pharmacopœias require a salt with 18 molecules. Examination of American-made samples showed that the percentage of water varies from 45.49 to 45.6 per cent., while a sample of Merck's contained 44.92 per cent. of water; 16 molecules of water of crystallization represent 45.7 per cent. of water, 15 molecules represent 44.10 per cent. of water, hence we are justified in retaining the old text.

Ammonium Benzoate.—The solubility of this salt varies according as to whether it is of neutral or acid reaction; the latter condition is more usually met with because of the readiness with which the salt loses in ammonia gas on standing.

Ammonium Carbonate.—The composition of this unaltered salt is represented by equal molecular quantities of acid carbonate and carbamate which yield theoretically 32.55 per cent. of ammonia gas. The British Pharmacopœia limits the ammonia strength of this salt to 31.66 per cent. Various samples of the unaltered translucent salt confirm this accepted formula. A salt which consists of two molecules of the bicarbonate to one of the carbamate, yields only 22.88 per cent. of ammonia. The U.S.P. '90 standard was 100 per cent., which is difficult to comply with. With the improvements made recently, the standard of 97 per cent. is not difficult to maintain.

Ammonium Salicylate.—This salt is furnished either as a crystalline anhydrous salt or crystallized with one-half molecule of water. Merck's salt, which is in colorless well-defined crystals, is anhydrous, and has evidently been crystallized from alcohol. Others of American origin are either in large irregular crystals with one-half molecule of water, or an anhydrous fine crystalline powder. Ammonium salicylate is quite as stable as the other inorganic ammonium salts. At 100° C., it commences to slowly volatilize, and at this temperature does not lose over 0.75 per cent. of ammonia. The percentage of ammonia yielded by the samples examined:—

No. 1=10.99 to 10.96 per cent. NH_3 and 89.07 per cent. of salicylic acid; moisture, 0.11 per cent. (traces of phenol).

No. 2=10.93 to 10.95 per cent. NH_3 and 88.36 per cent. of salicylic acid; moisture, 0.16 per cent.

No. 3=10.16 per cent. NH_3 .

Theory=11 per cent. of NH_3 and 89.00 per cent. of salicylic acid, corresponds to anhydrous salt.

Theory=10.39 per cent. of NH_3 and 84.12 per cent. of salicylic acid, salt with half a molecule of H_2O .

All the salts contain necessarily a slight excess of salicylic acid.

A 98 per cent. salt as adopted by the U.S.P. allows 2 per cent. for free salicylic acid and moisture.

Antimony Oxid.—Very little if any of this chemical is made in this country, all being imported. Little if nothing is known of its origin and quality. The analysis would indicate that the samples, although from distant sources in this country, were obtained from the same parties abroad. These were found to be insoluble in acids, alkalies and organic acids. Evidently this antimony oxid consists of a mixture of various antimonious acids. Such a product is of but little medicinal use and since no standards could be drafted with which it might possibly comply, it is better out of the Pharmacopœia than in:—

	Per cent. Sb.		Per cent. Sb.
Eastern Sample	50.74	Theory, Sb_2O_3 contains	83.36
Western Sample	50.86	" Sb_2O_3 contains	75.02

Arsenic Trioxid.—The formula As_2O_3 which is used by some chemists, is based on the vapor density taken between 500° and 700° C., while at 1770° C. and above, the density corresponds to the old formula As_4O_6 . The determination of the solubility of arsenous oxid is very unsatisfactory; aside from temperature, time plays the most important part; when macerated in water at 15° C. for one day, the solubility was 1 in 6122 parts of water; for two days, 1 in 4835 parts. Comey in his work on solubilities gives the following interesting table:—

		Crystalline.	Amorphous.
1 hour, 100 parts water dissolve		0.023	1.58
12 hours, " " " "		0.360	3.36
24 hours, " " " "		0.956	3.306
1 week, " " " "		1.67	1.76
3 weeks, " " " "		1.776	1.713
2¼ years, " " " "		1.710	1.707

There are also great discrepancies if the determinations are carried out by the cooling of a hot saturated solution.

Aqua.—From the standpoint of the chemist, the framing of tests for the exclusion of sewage contamination from Aqua U.S.P., is a very unsatisfactory task. For at times it requires the highest skill on the part of the chemist to detect certain kinds of contamination by chemical tests, in fact a bacteriological examination is more to be relied on than the former. However, since it is the chief object of the Pharmacopœia to exclude such waters as are grossly contaminated, the revised tests will in careful hands accomplish this object.

Aqua Destillata.—The tests for ammonia were omitted, owing to the readiness with which this gas is taken up by distilled water when handled about the store. The presence of traces (more or less) of ammonia would have no bearing on the purity of distilled water anyhow.

Because of the solubility of the glass of containers in distilled water, we must permit the presence of soluble matter; this was not recognized in the last revision and caused hardships in the enforcement of our pharmacy laws.

This solubility of glass in water varies considerably, according to the nature of the glass, thus: 1000 c.c. of distilled water stored for one month in a green glass bottle gave a residue weighing 14 milligrammes; another like volume stored in an amber bottle gave 58 milligrammes of residue; still another sample of 1000 c.c. gave no weighable residue after storing for one month's time. One liter of distilled water when boiled for two hours in a Bohemian flask, took up only 20 milligrammes of residue, while American colorless chemical glass gave up 24 milligrammes of soluble matter under like conditions.

Ordinary water containing 75 milligrammes per liter can scarcely pass the U.S.P. tests for distilled water, hence such a substitution is not probable.

Arseni Iodidum.—The commercial impure article, prepared by fusing metallic arsenic and iodine together, is of variable iodine content, and in an unsatisfactory state for defining limits of purity. But if the pure compound be prepared by dissolving 10 c.c. of arsenous oxide in 250 c.c. of hot hydrochloric acid and pouring into a solution of 51 grammes of potassium iodide in 40 c.c. of warm

water and purifying by extracting the dry residue with chloroform or carbon disulfid, a very stable crystalline powder results. This is orange to red in color, according to the size of the crystals. The *same* product may be obtained on extracting the pulverized commercial article with chloroform or carbon disulfid or even water. Iodid of arsenic thus prepared does not lose weight after two hours' heating on a bath of boiling water; further heating at higher temperature causes the salt to sublime.

It is very singular why our manufacturers never attempted to improve the quality of this very potent salt. Presumably, because the retailers take what is given them.

The iodid thus prepared or purified, assays 83.07, 83.30, 83.88 per cent. iodin according to Volhard's method, and 83.36 per cent. gravimetrically. Theoretically, the compound should contain 83.54 per cent. of iodin.

Two arsenic determinations gave 16.32 and 16.47 per cent., while theoretically the compound should contain 16.46 per cent. of metallic arsenic.

I think that the limits of 83. per cent. of iodin and 16 per cent. of arsenic, corresponding to a 99 per cent. salt, are fair for all manufacturers, if they will only take the pains and extract the pure product from the fused mass (mess) they have heretofore furnished.

With such a product we can safely guarantee uniformity in the strength of Donovan's Solution.

Bromids.—Considering the quality of American bromin, it was deemed advisable not to raise the standard of the bromids and this was made uniformly 97 per cent. Higher grade bromids are readily obtainable at the same prices. The writer has found more low-grade sodium and especially ammonium bromids than those of the other bases.

Excessive alkalinity, which frequently occurs, has been provided against by a revised text. Many commercial samples examined showed an alkalinity exceeding Pharmacopœial limits, 1 gramme of KBr. requiring from 0.3 to 0.6 c.c. of decinormal acid V. S. Owing to the strictness of the old U.S.P. text regarding the presence of sulfates, it was necessary for manufacturers to remove these by means of barium bromid, hence the introduction of a test for the presence of barium. If the presence of sulfates in bromids and iodids of the alkalies and alkaline earths are ignored in the next revision, this test for barium may be dropped.

The test for iodids in bromids has been made more sensitive and reliable for general use by the method of agitating with a small volume of chloroform while adding diluted chlorin water drop by drop. The pale rose to faint violet coloration of 1 c.c. of chloroform produced by traces of iodine is readily and accurately distinguished before any blue with starch paste might be noted. The presence of 0.05 milligrammes of KI will impart a faint violet color to chloroform. This immiscible solvent chloroform is not so readily decolorized through an excess of chlorin water as an aqueous solution of iodized starch. Starch solution in the hands of the inexperienced, careless as to its freshness and proper preparation, is a very unreliable reagent for traces of iodine. While the presence of sulfates and chlorids may be ignored in the alkali salts, we must restrict them in such zinc salts as the bromid, iodid and valerate, which are given in fair-sized doses extending at times over greater periods. I have been assured from very reliable sources that zinc dross (waste from galvanizing iron) is largely used in the preparation of the various medicinal zinc salts, while the best grades of zinc oxid (98.5 to 99 per cent.) are demanded by the paint manufacturers.

The test limiting the chlorids in bromids and iodids of zinc to 0.1 per cent. is based on the fact that when a solution of lead bromid or iodid in acetic acid is evaporated, the two halogens are volatilized, leaving a chlorid behind which is identified in the usual manner.

Bromin.—Various samples of German bromine assayed 99 per cent. while that of Michigan origin was 98.5 per cent. Bromine from Western Pennsylvania and Ohio contained from 6 to 12 per cent. of chlorin.

[To be continued.]

OHIO BOARD OF PHARMACY.

NOTICE TO REGISTERED PHARMACISTS AND ASSISTANT PHARMACISTS IN
THE STATE OF OHIO.

WHEREAS, Section 4410 of the Pharmacy Law confers upon the Board of Pharmacy authority to revoke the certificate of any person guilty of a felony, or gross immorality, or who is addicted to the liquor or drug habit to such a degree as to render him unfit to practice pharmacy.

And, further, the Attorney-General of Ohio in an opinion given to the Board of Pharmacy on July 21, 1905, held that the sale of

narcotic drugs, particularly cocaine and its derivatives or compounds, in violation of the statutes regulating the sale of such drugs constituted gross immorality within the meaning of a portion of Section 4410 of the Pharmacy Law, and that the Board of Pharmacy is justly entitled to revoke the certificate of any registered person found guilty in any court in the State of the unlawful sale of such narcotic drugs.

Therefore, this notice and warning is given to all registered pharmacists and assistant pharmacists of Ohio, that the Board of Pharmacy will hereafter proceed against every person whom the courts of the State have adjudged guilty of violating the laws regulating the sale of narcotic drugs for the revocation of certificates of registration in accordance with the power conferred by Section 4410 of the Ohio Pharmacy Law as interpreted by the Attorney-General of the State.

By order of the Board,

W. R. OGIER, *Secretary*.

COLUMBUS, O., October 13, 1905.

PHILADELPHIA COLLEGE OF PHARMACY.

The Quarterly Meeting of the Philadelphia College of Pharmacy was held June 25, 1906. President Howard B. French in the Chair.

Owing to the illness and consequent absence of the Secretary, Dr. Charles A. Weidemann, the Registrar was requested to act as Secretary *pro tem*.

The minutes of the Annual Meeting held March 26, 1906, were read and approved.

The minutes of the Board of Trustees were read and approved.

Following the report of the Historical Committee the Chair suggested that Mr. Wiegand be requested to write his recollections of the early Pharmacists of Philadelphia, which he consented to do.

The Committee on Necrology reported the death of the following active members: Dr. John Bley, Robert C. Brodie, Dr. Joseph P. Bolton, Henry Cramer, Edward T. Dobbins, Louis Koch, Allen Shryock, and a corresponding member, Dr. Carl Schacht, of Berlin. In connection with the above report the Chair read an abstract from

the will of the late Mr. Edward T. Dobbins establishing a scholarship in the College.

The Committee on Membership reported the standing of members and recommended that four members be dropped for non-payment of dues. The election of two active members was reported. Several men, prominent in pharmacy and botany, were proposed for honorary and corresponding memberships. The Committee recommended that each member of the College be requested to furnish a biographical sketch of himself, giving the most important data pertaining to his life and work, together with a photograph of himself.

Mr. Wm. McIntyre presented to the Publication Committee a set of bound volumes of the AMERICAN JOURNAL OF PHARMACY (Vols. 1850-1905) for which a vote of thanks was unanimously tendered.

The following resolution was unanimously adopted: The members of the Philadelphia College of Pharmacy note with sincere regret the absence of its efficient Secretary, Dr. C. A. Weidemann, who, it is learned, has been quite ill for some weeks past, and express the hope that he may rapidly regain his health and strength and soon be among us again.

APPOINTMENTS.

Delegates to the American Pharmaceutical Association: Joseph P. Remington, Henry Kraemer, Samuel P. Sadtler, Clement B. Lowe, and M. I. Wilbert. Alternates: M. N. Kline, E. M. Boring, Miers Busch, W. L. Cliffe, and J. W. England.

Committee on Nominations: W. A. Rumsey, J. M. Baer, Henry Kraemer, O. W. Osterlund, Wm. McIntyre.

Committee on Necrology: S. P. Sadtler, Henry Kraemer, and Gustavus Pile.

Historical Committee: G. M. Beringer, T. S. Wiegand, Henry Kraemer, M. I. Wilbert, and J. M. Baer.

ABSTRACTS FROM THE MINUTES OF THE BOARD OF TRUSTEES.

March 6, 1906.—The following resolution was adopted relative to the death of our late member, Edward Tomkin Dobbins, which took place the 17th day of February, 1906.

WHEREAS: Edward Tomkin Dobbins, a graduate and member of the Board of Trustees of the Philadelphia College of Pharmacy, passed from this life on the 17th day of February, 1906.

That the College by his death has lost a devoted and faithful friend, who testified by his many acts of kindness and thoughtfulness to young men employed in the drug business, his consistent belief in the value of a sound pharmaceutical education as well as his love for his Alma Mater.

Resolved: That the Board of Trustees of the Philadelphia College of Pharmacy attend the funeral of their deceased member, and that a copy of these resolutions be sent with expressions of sincere sympathy to his family.

Committee.

JOSEPH P. REMINGTON,
HOWARD B. FRENCH,
RICHARD M. SHOEMAKER.

April, 3, 1906.—The following officers for the ensuing year were elected: M. N. Kline, Chairman of the Board of Trustees; George M. Beringer, Vice Chairman of the Board of Trustees; Jacob S. Beetem, Registrar; and the Standing Committee for the year appointed.

The Committee on Instruction reported favorably upon electing Professor LaWall, Associate Professor of Theory and Practice of Pharmacy.

May 1, 1906.—Committee on Instruction recommended several important measures relating to improvement in the educational standing of the classes, which were adopted. The Treasurer presented a very favorable Annual Report.

May 11, 1906.—Committee on Examination presented their report recommending 111 students for the degree P.D., 5 students for the degree P.C., and 8 students for the Certificate of Proficiency in Chemistry, making a total of 124; also announced the prize winners. Committee on Instruction recommended that after this year no student of the first or second grade classes be permitted to take the Fall examination in any branch as a conditioned student, unless failure to submit an examination paper in the final examination is satisfactorily explained as due to an unavoidable cause. (Adopted.) Tickets for tuition, \$15 each, but if paid for prior to November 15th at the rate of \$15 each, thus allowing a rebate of \$1 on each ticket. (Adopted.) Also recommended an Introductory Exercise for the First Year class, to be held September 27, 1906, at 3 P.M. in the College Auditorium, and to consist of addresses by the President

and members of the faculty. (Adopted.) Prof. Remington reminded the Board of Trustees that Mr. Wallace Procter had served as a member for the past twenty years; and moved that the Board place on record its high appreciation of his services as a member of the Board of Trustees and especially as Chairman of the Committee on Examinations. Unanimously carried.

J. S. BEETEM,
Secretary pro tem.

AMERICAN PHARMACEUTICAL ASSOCIATION.

PROVISIONAL PROGRAM, SEPTEMBER 3-8, 1906.

The following provisional program has been arranged for the meeting at Indianapolis:—

Monday, September 3, 10 A.M. Meeting of Council; 3 P.M. First General Session. The Nominating Committee will meet following adjournment of General Session.

Tuesday, September 4, 8.30 A.M. Reception; 10 A.M. Second General Session; 3 P.M. Session of the Section on Education and Legislation; 8 P.M. Session of Section on Commercial Interests.

Wednesday, September 5, 10 A.M. Session of Section on Education and Legislation; 3 P.M. Meeting of American Conference of Pharmaceutical Faculties; 3 P.M. Meeting of the National Association of Boards of Pharmacy; 8 P.M. Session on Scientific Papers, Lecture by Dr. H. H. Rusby.

Thursday, September 6, 10 A.M. Session of Section on Scientific Papers; 10 A.M. Session of Section on Commercial Interests; 3 P.M. Joint Conference of Faculties and Boards of Pharmacy; 8 P.M. Session of Section on Practical Pharmacy and Dispensing.

Friday, September 7, 10 A.M. Session of Section on Historical Pharmacy; 3 P.M. Session of Section on Practical Pharmacy and Dispensing; 3 P.M. Session of Section on Scientific Papers; 8 P.M. Installation of Officers; 9 P.M. Historical Pharmacy (Memorial Session).

Saturday, September 8, 9 A.M. Organization of the New Council; 10 A.M. Final General Session; 3 P.M. Meeting of the Council.

THE PHILADELPHIA BRANCH OF THE AMERICAN PHARMACEUTICAL ASSOCIATION.

The following letter has been sent out to pharmacists in the vicinity of Philadelphia, and it is to be hoped that a number of these will ally themselves with the Association and co-operate in extending the usefulness of the local branch :—

If you, as a pharmacist, are interested in the practice of pharmacy or are willing to assist in advancing the professional side of your calling, you should be interested in the work that is being done by The American Pharmaceutical Association and particularly the extension of that work through local branches.

If you do not know what the American Pharmaceutical Association is, what it has done or what it is doing to advance the profession of pharmacy, you should send to the Secretary of the local branch for literature.

If you do know what the American Pharmaceutical Association is and what it has done for you and for the practice of pharmacy in America, you should acknowledge your obligation by sending to the Secretary of the local branch for the necessary application blank.

If the work that has been done or is now being done by the American Pharmaceutical Association does not meet with your approval or if you are not willing to take part in developing the professional side of your calling, write to the Secretary of the local branch and tell him your reasons why the objects and aims of the American Pharmaceutical Association do no appeal to you. Your objections, if they are valid, will serve as suggestions for improving the work of the Association and will, therefore, be of benefit to all who are in any way interested in pharmacy.

M. I. WILBERT, *Secretary*,
2811 Diamond Street, Philadelphia, Pa.

AMERICAN CONFERENCE OF PHARMACEUTICAL FACULTIES.

The American Conference of Pharmaceutical Faculties was organized at Richmond, Va., May 8, 1900, for the purpose of promoting the interests of pharmaceutical education. The organization has enjoyed a steady growth since that date, and to-day has twenty-six

schools and colleges of pharmacy on its membership list. The seventh annual meeting to be held at Indianapolis, Ind., September 5th, will be the most important in the history of the organization. The requirements for admission to the conference and for continued membership in the organization will be under consideration. With a view of raising the present standard, with the exception of the executive session, during which applicants for membership are considered, the meetings of the conference are open to all interested parties. Pharmaceutical educators and members of boards of pharmacy are particularly urged to be present at the opening session.

Proceedings of the 1905 meeting will be mailed upon application.

H. M. WHELPLEY, *President*.

WILLIAM A. PUCKNER, *Chairman Executive Committee*.

J. O. SCHLOTTERBECK, *Secretary-Treasurer*.

NOTES AND NEWS.

AMERICAN PHARMACEUTICAL ASSOCIATION.—The interest in the Procter Monument continues, and the work of collecting the funds seems to have been fairly begun in various parts of the United States.

Frank Richardson, Treasurer of the New York State Pharmaceutical Association, reports that the Sub-committee of that Association has collected \$268.20.

Prof. F. J. Wulling writes that the Minnesota State Pharmaceutical Association has appropriated \$100.00 to the Procter Monument Fund, and that he individually will subscribe \$10.00.

The members of the Pennsylvania Pharmaceutical Association have up to date subscribed \$216.00. The following are the names of contributors not previously reported, together with the amount subscribed by each:—

George A. Gorgas	\$ 5 00	William H. Smith & Co.	\$ 5 00
D. J. Thomas	10 00	Joseph L. Lemberger	10 00
W. L. Cliffe	10 00	H. T. Waldner	1 00
Clement B. Lowe	10 00	Henry J. Siegfried	10 00
William McIntyre	10 00	George W. Roland	2 00
Edwin M. Boring	5 00	Franklin M. Apple	5 00
William E. Lee	5 00	Henry C. Blair	5 00
L. L. Walton	5 00	Charles E. Vanderkleed	2 00
R. H. Lackey	5 00	Charles T. George	10 00
Mrs. Horace Lee	1 00	Miss M. A. Moffet	1 00

Thus far Prof. Henry Kraemer has received subscriptions from the members of the Philadelphia College of Pharmacy amounting to \$354.50. The following are the names of contributors not previously reported:—

E. F. W. Garber	\$ 3 00	Frank X. Moerk	\$10 00
Samuel B. Kirk	10 00	Charles B. Fricke	3 00
F. F. Muller	2 50	C. W. Hancock	10 00

W. C. McPike, a member of the Kansas Pharmaceutical Association, has contributed \$10.00 through Prof. L. E. Sayre.

CHARLES H. LAWALL, Instructor in Theory and Practice of Pharmacy, has been made Associate Professor of Pharmacy in the Philadelphia College of Pharmacy. He will give lectures in inorganic and organic pharmacy to the students of the second-year class. Professor LaWall has acted in the capacity of Instructor in Pharmacy since October, 1900. A few years ago he became associated with Professor Henry Leffmann in general analytical work. He has succeeded Dr. Leffmann in the ownership of the laboratory and in many details of the work and during the past two years has done much work in food adulteration, being frequently called upon to testify for the State Food and Dairy Commission as well as for others. He has been a frequent contributor to pharmaceutical and chemical literature and has written a number of papers on the detection of adulterations in foods and drugs.

A COLLECTION OF PLANT CONSTITUENTS, including alkaloids, glucosides, amaroids, sugars, starches, plant acids, coloring principles, fats, waxes, and some rare aromatic principles, has been presented to the New York botanical garden by E. Merck & Co., of Darmstadt and New York. The number of exhibits is between 400 and 500, comprising not only the most active medicinal principles, and other things for which uses are now known, but many things extracted from plants only experimentally, for scientific purposes, for which it is hoped uses may be developed in the future.

JACOB DINER, Secretary of the Metropolitan Association of Retail Druggists, of Greater New York, has been appointed a member of the National Executive Committee of the N.A.R.D., to fill the vacancy caused by the resignation of Thomas Vogeli of Minneapolis. Mr. Diner has shown himself to be alert as to the present needs in pharmacy and in his new office he will have a chance to give his abilities wider scope.

ARNE OLDBERG, son of Prof. Oscar Oldberg, and Professor of Music in Northwestern University, is engaged in composing the orchestral parts of an overture and completing the score of a symphony. A recently written theme and variations for full orchestra by Prof. Oldberg will be performed by the Theodore Thomas Orchestra next season.